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The Months and Seasons in Early English Art.

IT has been shown, in our recent article upon Tesselated Pavements, that the artists of ancient Rome have left to us, but little injured by the devastations of twenty centuries, several mosaic pictures of the deities who presided over the months or the seasons, and representations in squares of coloured stone and glass of the months personified in human guise surrounded with attributes of conventional detail. Whether these pictures, elegantly and chastely conceived as they are, and executed in a manner which speaks eloquently of the labour and feeling of the art-workman to whom their fabrication is due, were suggested by the artistic productions of any race older in the application of pictorial devices to paved floors than the Romans, or not, it would be difficult to decide. It may be that they were originally suggested to æsthetic minds by the fortuitous arrangement of the multi-coloured pebbles of a Mediterranean beach. But it matters little to speculate how first the idea of perpetuating a picture in a pavement arose. There can, however, be no doubt that just in the same way as the ornamental borders and geometrical patterns of the Roman pavements, at that period fairly numerous in England, were studied and reproduced in the earliest ornamental mouldings, entablatures, cornices, and other subordinate parts of native English ecclesiastical architecture, for example, in the guilloche and billet moulding, so also it is clear that the representations in the circular panels and compartments of these pavements,—themselves not altogether unlike the pictures which are found on the walls of Roman villas, or in the vellum pages of the early Roman manuscripts in the Vatican Library,—suggested to the expanding mind of the draughtsman and illuminator many of the beautiful groups which are found in the calendars prefixed, from the tenth to the fifteenth century, by the scribes of the Psalters and miscellaneous Service Books, to the volumes which yet exist to testify to the elegant character of this class of early art. These groups, of which the manuscripts in the British Museum contain a considerable number, are introduced into the portions set apart for the monthly calendar, and in many cases they are balanced by similar pictures, also set in round panels or niches, of the zodiacal symbols with which we are all familiar; some, however, of the earlier pictures are drawn along the lower margins of the pages without any bounding line. In one of these, the celebrated Cottonian MS., Julius A. vi., a work of the eleventh century, January is illustrated in outline drawing by a group representing the practice of the art of ploughing. Four oxen are drawing the double-handled and wheeled plough over the peculiar hummocky ground which is so thoroughly representative of Saxon landscapes. The construction of the plough shows considerable intricacy. The oxen, yoked in two pairs, are guided by a man standing before them, and holding a long goad. Close behind the ploughman walks the sower with a bag of grain in his grasp, handfuls of which he is scattering among the irregular heaps and clods thrown up by the ploughshare. The whole picture is as natural and intelligible to-day as it was when first drawn 800 years ago. It may be compared with similar scenes in the celebrated Utrecht Psalter. Another Cottonian manuscript, Tiberius B. vi., contains a picture very richly coloured, but not so firmly drawn, containing but few points of difference in its details from this one. Later MSS., such as Nero C. iv., of the twelfth century and of English style, represent the opening month of the year as Janus, the two-faced Classic deity, holding a key in his hand, thereby symbolising the unlocking of the new year. This design is clearly of ancient origin, and there can be little doubt that it was suggested by a similar treatment of the month in a mosaic pavement, similar to those of personified months and seasons found at Corinium or Cirencester to which reference has been formerly made. Still later art symbolises January by a pretty little vignette of a man seated on a stool or chair, drinking from a bowl, which he raises to his mouth with one hand, while in the other he holds a boot, the naked foot from which he has taken it being held to get warmth in front of a blazing fire upon the hearth. Sometimes a variation is introduced by the addition of a crutch in the hands of the figure, so as to point more conspicuously to the effects of winter upon the feet. Occasionally, a wine barrel, with a spigot in it, is painted at the side or in the background, thereby pointing out the nature of the beverage which the principal figure is quaffing, for January was in the early Middle Ages quite as markedly a month of feasting and jollity as it is even in these later days. Sometimes, also, the dress of the man seems to indicate that he belonged to some religious order, monastic or ecclesiastical. This scene of warming the feet before a fire is occasionally enhanced with the addition of a caldron or pot hanging over the fire upon a serrated hook. At other times it is replaced by the scene of a table set out with viands of somewhat uncertain kinds, at which a hungry host or guest is being regaled.

February is variously symbolised. The earliest manuscripts show scenes of pruning or lopping trees, the operator being armed with a curved bill, not unlike those used for chopping wood at the present day, the trees being, however, of a stiff and conventional form, with branches fantastically bent into unnatural positions. Sometimes the month is personified by a woman with freely-flowing hair and gaudily-decorated robes, holding up in each hand a long candle or taper, lighted and ornamented with spiral bands. This device appears to refer to the great church feast of Candlemas, *Festum Candelarum*, or the Purification of the Blessed Virgin Mary. One early manuscript departs from this conventional design, and places in its stead a figure of a man seated warming himself before a fire, a device more commonly attributed, as has been shown above, to the preceding month. Another MS. in the Harley collection in the British Museum, No. 4,940, has for its February illustration a nun, or female in quaint attire, wearing a pair of black stockings, and holding up one leg in the attitude of a ballerina.

March is represented in several ways. The oldest manuscripts show various agricultural operations proper to the month, such as sowing grain, digging, raking, or hoeing the earth, and breaking up the clods with an axe or chopper; some of the hoes have a crescent blade of peculiar form, almost Eastern in its curves; the sower is provided with a basket or sieve; the digger has a spade with a single shoulder only, not unlike some of the ancient spades recently figured by the late Mr. James Drummond, and described by Mr. Joseph Anderson in the work entitled "Ancient Scottish Weapons." The rake is broad and armed with nine teeth; the pickaxe and hoe have forms with which we are not unfamiliar from their frequent occurrence in works of archæological illustration. A man lopping trees is a favourite symbol of the month of March, and in illuminated calendars of the twelfth and thirteenth centuries the resplendent colouring of the scenes, the gorgeous hues of the dress of the woodman, the golden backgrounds, and the elegant curves of the branches enriched with leaves of trefoil or other conventional and regular patterns, combine to make up a very beautiful and typical picture of the spring-time occupations of our rustic forefathers. One of these pictures of woodland is enriched with a bird's curious conical nest on the branches of a tree, but horizon is wanting and perspective faulty or disproportioned.

April is a joyous month, for the spring has already come in, and therefore the greater number of pictures symbolical of this month contain a youth in light clothing advancing towards the front, and holding up in each hand a branch of hawthorn or other native tree loaded with flowers and foliage. This, there can be little doubt, points to the custom pre-

valent at the present time of gathering the may, or whitethorn, a custom dear to the lower classes who dwell in great cities, and only too often ruthlessly destructive of the suburban hedges. It may be that some reference to the going of Noah out of the ark, a festival celebrated on the penultimate day of the month, is involved in this ancient custom of gathering the green leaf as an earnest that the wet season of winter was passed and the bye-ways of the earth once again become pleasant and habitable. One early manuscript in the Cottonian collection replaces this usual scene with that of a feast, where three personages are seated on a throne or couch, which is adorned with terminals having the form of animals' heads,—the lion and wolf,—with an attendant pouring out wine or other festive drink on the right hand, and a guardian warrior, armed with shield and spear, on the left hand. Another equally ancient manuscript, dating from the eleventh century, has a picture of similar import, with the addition of an attendant blowing a horn. The month of May, in the earliest calendars, is illustrated by a picture of shepherds tending their flocks of sheep, in which the ram with his curling horn, and the ewe with her lamb, the crook, and the lamb in the arms of the shepherd, are naturally depicted with that charm which the simple homely character of Saxon drawings always possess. In another equally early manuscript a group of sheperdesses or country girls is introduced. But this scene gives place in succeeding ages to the far more frequent vignette of a falconer, either riding upon a horse or standing full-length, and holding on his wrist a falcon, hooded and jessed. Dancing, love-making, and turning sheep out to grass are also met with occasionally.

June is a very varied month in its early symbolical representations, and there is some confusion in the early manuscripts between this month and July and August. One of the oldest illustrations (Julius A. vi.) consists of a man loading the felled stumps of trees into a primitive wain or car, which is furnished with two wheels, and drawn by a pair of oxen yoked together. This very scene is given in another Saxon manuscript (Tiberius, B. v.) as the emblematic picture of July, the June scene in this manuscript being derived from the August scene in the Cotton Julius. Later illuminations attributed to June show scenes of haymaking, sheep-shearing, field sports, or tourneys, but principally of mowing with scythes, in some examples serrated on the cutting edges, in other examples indistinguishable in point of shape from those at present in use,—a striking instance of the survival of the forms of implements in common use; of gathering trefoiled and quatrefoiled flowers in a gaily-coloured field; or of men carrying bundles of faggots or boards, carefully corded, upon the back. The early Cotton manuscript already mentioned indicates July by a party of five grass-cutters each carrying a scythe, one in the act of sharpening his blade with a whetstone, another preparing to do so, while the three others are cutting the grass before them. An assistant stands by, using a two-pronged fork. Reaping with a sickle having a toothed edge in some cases is found in the vignettes of early calendars, but by far the most frequent is that of mowing.

In July, also, the manuscripts of English origin represent not only haymaking, but hoeing wheat, and French and Flemish manuscripts indicate the art of reaping. August is indicated in Saxon MSS. by a wattled wagon, men reaping with the sickle, and carrying the cut corn to the cart, a watchman being stationed at each side of the field, on guard with a spear, against any sudden irruption of the too frequent enemy. One labourer appears to be using a kind of hand-drill. But scythes and sickles are frequently given in illustrations for this month. Sometimes the reaper gives place to the sower, as in the Cotton MS. (Nero, C. iv.); and the foreign manuscripts show the thrashing of the new grain, or a scene of shearing sheep.

September marks an epoch of the year; the Saxon MSS. are illustrated in this month of their calendar with driving swine to the forests, while an attendant blows a horn to warn the wanderer, and as an indication of his peaceful presence in the neutral ground which at that time lay between village and village, the "mark" land where law and right had little power to assert their ascendancy over prehistoric custom of indiscriminate attack. Sowing grain from a bin or pocket, pruning vines and fruit-trees, gathering and treading out the grapes, also not unfrequently form the emblematic representation of the month of September. The wine-vat, the earnest manner of the vintager, naked or draped gorgeously, and often raising a bowl of the juice to his lips, and the accessories of the wine harvest, are vividly and truthfully portrayed.

October begins to indicate a flagging of the annual spirits. Early codices show a heron or other large feathered game feeding in a forest, a man on foot, with rugged alpenstock or staff, flying a falcon at the game, a horseman also letting loose his trained hawk at the quarry, but ploughing, sowing grain out of a basket, wine-treading and juice-tasting, gathering grapes with a knife of strange crescentic form into a hemispherical basket, and beating down acorns for the swine, are also found to be used as typical illustrations for the month.

But November appears to have been the really correct time for driving herds of swine to the woods and beating down the acorns and the beech-mast for them, the curious form of the club being well worthy of notice; but the earliest manuscripts show a party of persons warming their hands before a blazing fire, while others carry a handful of sticks or fuel to add to it, the tongs, the bundles of faggots, and the wattled wall being in every case details of interest. Killing fatted oxen or pigs with the two-handed axe, and carrying the dead meat away on a man's back while another destined victim looks vacantly upwards at the butcher, are not infrequent representations of this month in our early art-pictures.

December ushers in, at length, the end of the year's round of typical employments and customary duties. The early art indicates the carrying of corn in heavy baskets, borne by two men, on a pole; thrashing the grain with the flail; sifting or winnowing the results of the harvest; feasting at a well-spread board; killing cattle or swine with a heavy axe, upraised while the slaughterman places one foot upon the creature whose life he is about to take; sometimes the butcher is draped in a blue apron, girded up, and armed with a large axe, of which he appears to use the back, and not the edge, upon the devoted animal. One class of manuscripts represents December by a baker standing before an open oven and holding a peel in his hand, in the act of attending to the baking of bread and cakes. In some cases scenes of hunting are substituted for, or added to, the above-mentioned autumnal scenes; and occasionally, but very rarely, the December amusements are skating and sleighing. Most of these illuminated pictures are represented in minute detail, and afford to the student of ancient and Mediæval arts excellent examples of manners and customs, dress and details of interiors. A copious list of the manuscripts in the British Museum, containing the subjects of these calendar emblems, will be found in a volume, published in 1879, entitled "Early Drawings and Illuminations in the British Museum," by W. De Gray Birch and H. Jenner, at p. 265. Every one of the manuscripts will bear the closest and most careful scrutiny, for they are the representations of an art which has perished along with the scenes they delineate. The pictorial art which finds a place in modern calendars, although often ingenious, does not appear to have been inspired or influenced by a due and proper examination of these, its ancient prototypes, and, in so far, it fails to carry out the sacred, if not divine, precept of handing down to posterity the lamp of human observation, which should be taken in hand with reverence and passed on to future ages with undiminished lustre, and, if possible, increased admiration for the things that belong to past ages, although the spirit of their influence is even yet not altogether dead among us.

Woolwich.—A monument is being erected at the entrance to the Gun Park, Woolwich Common, in memory of the officers and men of the Royal Artillery who fell in the Zulu and last Afghan wars. The memorial is in the form of massive granite blocks, and is being erected by voluntary contributions from the officers and men of the Royal Artillery throughout the world, the subscription being limited to one day's pay. The monument was designed by Count Gleichen, the artist for the new Prince Imperial memorial at the Royal Military Academy.

PROPORTION IN PRACTICE.

A QUESTION STATED.

The subject of proportion as an essential agent and element in architectural design has been treated of so frequently and so variously, and nevertheless so irrepressibly recurs, that it seems to be matter of importance, in the interest of all parties to the discussion, that the questions which bear upon it should be clearly stated; and before discussion goes further,—as go further it certainly will,—certain bearings should be established which will enable by-standers to distinguish confused or irrelevant arguments from those which go straight at the obstacles to a simple and satisfactory solution.

The importance of proportion in architectural design in a general sense no one denies. So far as architecture leans upon engineering,—so far as it works under the conditions of stability of construction and economy of materials,—the designer is occupied with a succession of problems that turn upon the adjustment of relative quantities; that is, of proportion between weights and supports, thrusts and counter-thrusts, strains and resistances, voids and solids. A general regard to proportion is concerned no less in the combination of apartments and communications, in section and in plan.

And so as regards elevations and decorative treatment of members and details,—all are agreed to give chief applause to the designer whose work commends itself as pervaded by a fine sense of proportion. It is to such a sense, in fact, that the largest share of honour is assigned, alike when clumsiness and when feebleness is evaded,—when the mean between the too little and too much, the *poco piu* and *poco meno* of the Italian master, is happily and harmoniously achieved.

So far there appears to be scarcely an opening for disagreement; but, as usual, it is when generalities are narrowed down to the requirements of specific application,—when abstract theory has to make good its importance and utility in the face of a novel and diversified complex of particular circumstances, that occasions spring up for conflict of opinion, or for hesitations and perplexities, that forbid the student to commit himself to a very positive expression of either differences or agreement.

Difficulties enough are likely to arise with respect to selection of occasions for the application of proportion; but even when these are settled, opportunity is opened for discussion over a principle which may or may not affect more or fewer of these applications.

The importance of general regard to proportion in design being conceded, the question arises as to the degree of strictness with which we are to hold ourselves bound to such concession. Is there, in fact, any value in the observance of minutely precise proportions, whether extensive or moderate dimensions are to be dealt with? Is there, to take one example, any advantage to compensate for expenditure of solicitous care in exacting that a dimension of 100 ft. shall be executed without an error in excess or defect equal to the tenth of an inch?

A question in this extreme form might never have arisen but for the precedents which remain to us in the works of the Greeks. It is averred on authority, with every claim to command our respect, that the example given is no exaggeration of the scrupulousness of their best architects in their noblest works. And whatever differences and doubts may exist as to the extent and definiteness with which any theory of proportion was worked out and accepted by the Greeks, there are none whatever as to their sense of proportion as evidenced by the effects of their works; their practical success is at least beyond cavil. A controversy is thus prepared for between those who assume,—and even say that they are prepared to prove,—that the Greeks worked upon a system of refined numerical proportion, and those who ascribe their success to no theory, but to an instinctive appreciation of the relative dimensions and magnitudes that would produce a beautiful effect. Even so, they will observe, one gifted with a good ear will sing in tune though entirely destitute of musical culture, and may even originate expressive airs which surpass the inventions of many a scientific musician; but an explanation of this kind manifestly goes no way towards accounting for the execution of architectural proportions with the infinitesimal accuracy of the example.

Here at once the controversy opens, and upon a double issue; or, rather, as we are not writing as controversialists, here at once we have to

pause and clear our ground before all parties to the inquiry can move on easily and amicably abreast. What sufficient assurance have we, in the first place, that the Greeks did execute their works with such marvellously scrupulous accuracy, whatever might be the process by which they decided on relative dimensions? And in the next place, and, after all, supposing that they are to be, indeed, credited with such astonishing conscientiousness, is there reason to think that any real advantage would accrue therefrom? It may, indeed, be still further a question whether, if the practice of the Greeks was in their particular circumstances both possible and advisable, it may be advisable and good for us to attempt to follow their footsteps in this direction. But this consideration may stand over; it is due to their great and merited authority that we should do our best to verify what their system was, and what was their own appreciation of its importance and the importance of its minute application.

Certainly there is great preliminary difficulty in conceiving how minute accuracy, such as that of our example, can be of any real value under the conditions of the case,—even in the clearer Grecian atmosphere, the comparative smallness of even their largest structures, and the sharpness of the Pentelic marble which they employed in them throughout. Is there any reasonable ground for ascribing to the sense of sight, marvellous as the faculty is, a power of appreciating differences of dimensions by special pleasingness or the reverse, with a delicacy that would more than rival the discriminating power of the musical ear?

When two musical notes sounded together are produced by concurrent sequences of vibrations of the air, which are so related that the third vibration of one is constantly coincident with the second of the other, a pleasing effect is produced which we call consonance. No one supposes that our pleasure on such occasions is due to recognition of this agreement in proportion. The fact of such agreement is only to be made evident by careful experiment. The vibrations which are propagated from a pair of strings travel to the ear together, and their periodical coincidence produces satisfaction in the absence and independently of explanation, and a musical ear is offended by the fact, not by the scientific knowledge, of the minutest failure in preciseness of proportion. The bâton and the glance of Costa give sign when a semitone is false amidst the stormy melody of a full orchestra; but it would seem that the case must be very different with impressions which are propagated by vibrations, not of air, but of the luminiferous ether, and affect the eye concurrently from proportionate visible quantities. The eye has difficulties in responding to proportions which the ear is not troubled with.

The height of the Parthenon, from the line of step to the apex of the pediment, is proportioned to the breadth of the step, or stylobate, as 7 to 12; 12 : 7 :: 101·341 : 59·115 ft. The measured height (59·127 ft.) differs from that which is so brought out proportionately by the utterly insignificant dimension 0·012. But let this façade be seen in oblique perspective, when the stylobate would be foreshortened visually, as indeed it would be as most frequently seen, and what is then to become of any precise visual proportion? And even if we suppose the spectator to take up position directly in front, the visual angles under which he would receive impressions of height and breadth would be entirely different from, and therefore would entirely confound, the proportions of the dimensions as measured.

Let us take a still simpler example in another form. The height of a spire is precisely equal to that of a tower which it surmounts; any value which there may be in such equality may be expected to tell when we inspect a geometrical elevation, or when we view the structure itself from a very considerable distance, or from a station which brings the eye to an exactly intermediate level. But when it is viewed from any of the nearer and lower points of view which are chiefly to be considered, the upper division will be seen under a smaller visual angle than the lower, and the proportions of these angles will vary constantly as the observer shifts his position. What then, we may again ask, becomes of any value of approximation to equality of dimensions even within a foot or two, to say nothing of scrupulosity as to the fraction of an inch? Why may not the designer reasonably set aside respect for definite proportions altogether, complete his design by "scowl of brow," and settle dimensions for working drawings by scale of feet and adherence to the accepted divisions of the foot-rule?

If hesitation is felt in giving in to this conclusion, it will probably be on the part of those who, rightly or wrongly, are convinced that it was not so that the great designers of antiquity and (in their degree) of the Middle Ages also, worked, and that, considering results, it is scarcely safe to put aside the process which attained these results because we are incompetent to evolve the innermost secret of its importance. The stand which may be made on this line of defence is not to be treated contemptuously. We come here to the discussion not of the value of a theory in the first instance, but as to the matter of fact whether a theory was employed at all. If it is but in rare instances that Gothic architecture emulates the precise finish of the Greek, there is no lack of evidence in favour of a progressive consideration for systematic proportions, as when a preference appears for a triforium to be made just half the height of the clearstory in a bay, and both together just half the height of the central aisle; an arrangement which brings out a proportional sequence of 1, 2, and 3, between triforium, clearstory, and opening to the side aisle.

In the *Builder* of 12th June, 1880, p. 737, the interior dimensions of Henry VII.'s Chapel are given as,—length, 103 ft.; breadth, 35 ft.; height, 60 ft. It can scarcely be by accident that these dimensions are in continued proportion,—that the breadth is to the height precisely in the same simple proportion as the height to the length, viz., 7 : 12,—a proportion which, curiously enough, has other applications in the Parthenon besides that which has been quoted,—

7 : 12 : : 35 : 60.
7 : 12 : : 60 : 102·875.

The full demonstration that a system of proportion was employed by the architect of the Parthenon, and of his mode of applying it, would require the reduction to form of materials for a treatise which is now not likely to be written. The appendix to Mr. Cockerell's "Bassæ and Ægina" gives the general lines of the argument. It is enough to say that candid controversy is not likely to extenuate the significance of such a fact as that, in a building so pre-eminent for dignity of proportion as the Parthenon, no systematic regulation of dimensions by the foot-rule can be established, while adjustments by direct proportion meet us everywhere. To take one example,—the normal eastern abacus of the column is exactly one-fifteenth part of the breadth of the stylobate, and in this manner has a covert relation to the sum of eight diameters of columns and seven intercolumns which complete the plan of the portico. The stylobate measures 100 Greek feet, and it might be thought that 6⅔ such feet would be a convenient dimension, and near enough for proportion; it was not so thought, however, by Ictinus, and instead of the simple 6·50, he chose to take the trouble to adopt the accurate fifteenth, or 6·66. If any architectural member whatever might seem to invite adherence to one settled dimension, it is the abacus. Yet on the western front it is varied, and again by a recognisable proportionate adjustment.

It appears, therefore, that if these questions are to be made matter of controversy, the parties to it are likely to confront each other as advocates of these incompatible theses. On one part it will be maintained that the employment of a precise and systematic scheme of proportion would in no way assist,—in fact, would hamper,—the designer, and so far be detrimental to beauty of design, and therefore could not have been an instrument of such masters of design as the great Greek architects.

On the other part we should hear,—As it can be positively made out that the Greeks of the best time did employ a scheme of proportion in the final adjustment and scrupulously exact execution of their designs, the presumption from their success is decidedly in favour of the importance of such an instrument, if we moderns can only recover and master it.

This latter view is, in any case, consistent with what all will acknowledge,—that in architecture, science and art join hands; there is a scientific element in all arts, but in architecture especially is the union conspicuous, inevitable, salutary. Architecture, however, in its noblest forms, is still, is ever, an art specifically; and science must be content to occupy an ancillary position, with so much self-respect as not to endure being jostled aside into insignificance, if also with so much modesty as not to pretend to undertake the functions of imagination and to oust her from her chair. Architectural science has some cause for complaint in having been gratuitously called upon to disown any such presumptions and having to struggle against unauthorised imputations which are advanced in prejudice of her most legitimate claims. It is too often assumed, by doubtless unintentional injustice, that those who earnestly hold that there is an important place in architecture for a systematic theory of definite proportions, imagine and inculcate that a student, when equipped with such a formula, is prepared to decide the dimensions of a few leading lines of his proposed building, and then to expect the other proportions to follow as a matter of course. No theorist who is sufficiently sober-minded to be worth attention entertains a notion so preposterous: he would be quite as ready to assert that when Beethoven had decided that his key should be C sharp minor, and made progress with some half-dozen phrases, his sonata was so far a finished work that any accomplished contrapuntist could complete it as well as himself. He would be quite as ready, or rather quite as little ready, to propound that, when a painter had resolved on a certain key of colour, and set his palette and put in a few leading tints, difficulties were at an end, that imagination might go to sleep and beauty be trusted to evolve itself mechanically, to come out like a conclusion worked by Professor Jevons's logical machine.

What inevitable guidance may be involved in the adoption of certain leading proportions would seem at most to be of the scope and nature of those which the painter submits to when, having deliberately committed himself to certain conspicuous tints, he has thereby bound himself to keep the rest of his colouring in harmony with them as best he may, and, in considering how he may best, has to arbitrate among the artistic advantages of a variety of competing stratagems and combinations. The very selection of these dominant tints in the first instance is not arbitrary in any loose sense. It is in virtue of capacity for a lively conception of a suitable and expressive treatment of his subject, that proportionate combinations are recognised as emergent from the very subject itself; a certain harmony, a generative ideal, is begotten, so to speak, in his mind, and his problem is to realise it by working out the more recondite relations which are ultimately involved, but do not spontaneously declare themselves. The problems involved in the adjustment of proportionate forms by the architect are in strict analogy to those of duly balanced, relieving, contrasted, and generally related tints and tones in painting, and even of schemes and stratagems of composition. In how many a fine Italian picture, in how many a group of a Holy Family, do we observe the affection of the master for a triangular grouping, "the principle of the pyramid"? We may number example after example in the National Gallery alone; and how little way does the adoption of the principle advance a mere imitator to the position of a rival? Even so we find that while an identical proportion governs the ground-plan of both Parthenon and Theseum on their largest lines, their subsequent proportions are divergent with a decided ultimate contrast of effect.

The controversialist who should take the side of systematic proportion in architecture might be excused for confidently expecting to be allowed to insist on the well-known analogy of music; but here, again, he is stayed in his exposition, and surely to his very natural surprise, by a previous question, by what seems to have become such in this all-questioning age; whether, indeed, the proportions which are established between the notes of the accepted musical scale are not in the main arbitrary, and might not have been very different indeed, and quite as reasonably might not have been almost anything if it had happened to so please the original framers of a scale which, getting an accidental and unnatural start, has usurped authority, and imposed upon us a system which satisfies our ears indeed, but only by mere force of early and inherited habit. A suggestion such as this is serious and startling indeed. Somewhat is here involved which affects the entire scope of art; for music is the very citadel of those who hold that the foundations of genuine art lie deep down in the ultimate unity of nature, in the established relation

valent at the present time of gathering the may, or whitethorn, a custom dear to the lower classes who dwell in great cities, and only too often ruthlessly destructive of the suburban hedges. It may be that some reference to the going of Noah out of the ark, a festival celebrated on the penultimate day of the month, is involved in this ancient custom of gathering the green leaf as an earnest that the wet season of winter was passed and the byeways of the earth once again become pleasant and habitable. One early manuscript in the Cottonian collection replaces this usual scene with that of a feast, where three personages are seated on a throne or couch, which is adorned with terminals having the form of animals' heads,—the lion and wolf,—with an attendant pouring out wine or other festive drink on the right hand, and a guardian warrior, armed with shield and spear, on the left hand. Another equally ancient manuscript, dating from the eleventh century, has a picture of similar import, with the addition of an attendant blowing a horn. The month of May, in the earliest calendars, is illustrated by a picture of shepherds tending their flocks of sheep, in which the ram with his curling horn, and the ewe with her lamb, the crook, and the lamb in the arms of the shepherd, are naturally depicted with that charm which the simple homely character of Saxon drawings always possess. In another equally early manuscript a group of sheperdesses or country girls is introduced. But this scene gives place in succeeding ages to the far more frequent vignette of a falconer, either riding upon a horse or standing full-length, and holding on his wrist a falcon, hooded and jessed. Dancing, love-making, and turning sheep out to grass are also met with occasionally.

June is a very varied month in its early symbolical representations, and there is some confusion in the early manuscripts between this month and July and August. One of the oldest illustrations (Julius A. vi.) consists of a man loading the felled stumps of trees into a primitive wain or car, which is furnished with two wheels, and drawn by a pair of oxen yoked together. This very scene is given in another Saxon manuscript (Tiberius, B. v.) as the emblematic picture of July, the June scene in this manuscript being derived from the August scene in the Cotton Julius. Later illuminations attributed to June show scenes of haymaking, sheep-shearing, field sports, or tourneys, but principally of mowing with scythes, in some examples serrated on the cutting edges, in other examples indistinguishable in point of shape from those at present in use,—a striking instance of the survival of the forms of implements in common use; of gathering trefoiled and quatrefoiled flowers in a gaily-coloured field; or of men carrying bundles of faggots or boards, carefully corded, upon the back. The early Cotton manuscript already mentioned indicates July by a party of five grass-cutters each carrying a scythe, one in the act of sharpening his blade with a whetstone, another preparing to do so, while the three others are cutting the grass before them. An assistant stands by, using a two-pronged fork. Reaping with a sickle having a toothed edge in some cases is found in the vignettes of early calendars, but by far the most frequent is that of mowing.

In July, also, the manuscripts of English origin represent not only haymaking, but hoeing wheat, and French and Flemish manuscripts indicate the art of reaping. August is indicated in Saxon MSS. by a wattled wagon, men reaping with the sickle, and carrying the cut corn to the cart, a watchman being stationed at each side of the field, on guard with a spear, against any sudden irruption of the too frequent enemy. One labourer appears to be using a kind of hand-drill. But scythes and sickles are frequently given in illustrations for this month. Sometimes the reaper gives place to the sower, as in the Cotton MS. (Nero, C. iv.); and the foreign manuscripts show the thrashing of the new grain, or a scene of shearing sheep.

September marks an epoch of the year; the Saxon MSS. are illustrated in this month of their calendar with driving swine to the forests, while an attendant blows a horn to warn the wanderer, and as an indication of his peaceful presence in the neutral ground which at that time lay between village and village, the "mark" land where law and right had little power to assert their ascendancy over prehistoric custom of indiscriminate attack. Sowing grain from a bin or pocket, pruning vines and fruit-trees, gathering and treading out the grapes, also not unfrequently form the emblematic representation of the month of September. The wine-vat, the earnest manner of the vintager, naked or draped gorgeously, and often raising a bowl of the juice to his lips, and the accessories of the wine harvest, are vividly and truthfully portrayed.

October begins to indicate a flagging of the annual spirits. Early codices show a heron or other large feathered game feeding in a forest, a man on foot, with rugged alpenstock or staff, flying a falcon at the game, a horseman also letting loose his trained hawk at the quarry, but ploughing, sowing grain out of a basket, wine-treading and juice-tasting, gathering grapes with a knife of strange crescentic form into a hemispherical basket, and beating down acorns for the swine, are also found to be used as typical illustrations for the month.

But November appears to have been the really correct time for driving herds of swine to the woods and beating down the acorns and the beech-mast for them, the curious form of the club being well worthy of notice; but the earliest manuscripts show a party of persons warming their hands before a blazing fire, while others carry a handful of sticks or fuel to add to it, the tongs, the bundles of faggots, and the wattled wall being in every case details of interest. Killing fatted oxen or pigs with the two-handed axe, and carrying the dead meat away on a man's back while another destined victim looks vacantly upwards at the butcher, are not infrequent representations of this month in our early art-pictures.

December ushers in, at length, the end of the year's round of typical employments and customary duties. The early art indicates the carrying of corn in heavy baskets, borne by two men, on a pole; thrashing the grain with the flail; sifting or winnowing the results of the harvest; feasting at a well-spread board; killing cattle or swine with a heavy axe, upraised while the slaughterman places one foot upon the creature whose life he is about to take; sometimes the butcher is draped in a blue apron, girded up, and armed with a large axe, of which he appears to use the back, and not the edge, upon the devoted animal. One class of manuscripts represents December by a baker standing before an open oven and holding a peel in his hand, in the act of attending to the baking of bread and cakes. In some cases scenes of hunting are substituted for, or added to, the above-mentioned autumnal scenes; and occasionally, but very rarely, the December amusements are skating and sleighing. Most of these illuminated pictures are represented in minute detail, and afford to the student of ancient and Mediæval arts excellent examples of manners and customs, dress and details of interiors. A copious list of the manuscripts in the British Museum, containing the subjects of these calendar emblems, will be found in a volume, published in 1879, entitled "Early Drawings and Illuminations in the British Museum," by W. De Gray Birch and H. Jenner, at p. 265. Every one of the manuscripts will bear the closest and most careful scrutiny, for they are the representations of an art which has perished along with the scenes they delineate. The pictorial art which finds a place in modern calendars, although often ingenious, does not appear to have been inspired or influenced by a due and proper examination of these, its ancient prototypes, and, in so far, it fails to carry out the sacred, if not divine, precept of handing down to posterity the lamp of human observation, which should be taken in hand with reverence and passed on to future ages with undiminished lustre, and, if possible, increased admiration for the things that belong to past ages, although the spirit of their influence is even yet not altogether dead among us.

Woolwich.—A monument is being erected at the entrance to the Gun Park, Woolwich Common, in memory of the officers and men of the Royal Artillery who fell in the Zulu and last Afghan wars. The memorial is in the form of massive granite blocks, and is being erected by voluntary contributions from the officers and men of the Royal Artillery throughout the world, the subscription being limited to one day's pay. The monument was designed by Count Gleichen, the artist for the new Prince Imperial memorial at the Royal Military Academy.

PROPORTION IN PRACTICE.

A QUESTION STATED.

THE subject of proportion as an essential agent and element in architectural design has been treated of so frequently and so variously, and nevertheless so irrepressibly recurs, that it seems to be matter of importance, in the interest of all parties to the discussion, that the questions which bear upon it should be clearly stated; and before discussion goes further,—as go further it certainly will,—certain bearings should be established which will enable bystanders to distinguish confused or irrelevant arguments from those which go straight at the obstacles to a simple and satisfactory solution.

The importance of proportion in architectural design in a general sense no one denies. So far as architecture leans upon engineering,—so far as it works under the conditions of stability of construction and economy of materials,—the designer is occupied with a succession of problems that turn upon the adjustment of relative quantities; that is, of proportion between weights and supports, thrusts and counter-thrusts, strains and resistances, voids and solids. A general regard to proportion is concerned no less in the combination of apartments and communications, in section and in plan.

And so as regards elevations and decorative treatment of members and details,—all are agreed to give chief applause to the designer whose work commends itself as pervaded by a fine sense of proportion. It is to such a sense, in fact, that the largest share of honour is assigned, alike when clumsiness and when feebleness is evaded,—when the mean between the too little and too much, the *poco più* and *poco meno* of the Italian master, is happily and harmoniously achieved.

So far there appears to be scarcely an opening for disagreement; but, as usual, it is when generalities are narrowed down to the requirements of specific application,—when abstract theory has to make good its importance and utility in the face of a novel and diversified complex of particular circumstances, that occasions spring up for conflict of opinion, or for hesitations and perplexities, that forbid the student to commit himself to a very positive expression of either differences or agreement.

Difficulties enough are likely to arise with respect to selection of occasions for the application of proportion; but even when these are settled, opportunity is opened for discussion over a principle which may or may not affect more or fewer of these applications.

The importance of general regard to proportion in design being conceded, the question arises as to the degree of strictness with which we are to hold ourselves bound to such concession. Is there, in fact, any value in the observance of minutely precise proportions, whether extensive or moderate dimensions are to be dealt with? Is there, to take one example, any advantage to compensate for expenditure of solicitous care in exacting that a dimension of 100 ft. shall be executed without an error in excess or defect equal to the tenth of an inch?

A question in this extreme form might never have arisen but for the precedents which remain to us in the works of the Greeks. It is averred on authority, with every claim to command our respect, that the example given is no exaggeration of the scrupulousness of their best architects in their noblest works. And whatever differences and doubts may exist as to the extent and definiteness with which any theory of proportion was worked out and accepted by the Greeks, there are none whatever as to their sense of proportion as evidenced by the effects of their works; their practical success is at least beyond cavil. A controversy is thus prepared for between those who assume,—and even say that they are prepared to prove,—that the Greeks worked upon a system of refined numerical proportion, and those who ascribe their success to no theory, but to an instinctive appreciation of the relative dimensions and magnitudes that would produce a beautiful effect. Even so, they will observe, one gifted with a good ear will sing in tune though entirely destitute of musical culture, and may even originate expressive airs which surpass the inventions of many a scientific musician; but an explanation of this kind manifestly goes no way towards accounting for the execution of architectural proportions with the infinitesimal accuracy of the example.

Here at once the controversy opens, and upon a double issue; or, rather, as we are not writing as controversialists, here at once we have to

pause and clear our ground before all parties to the inquiry can move on easily and amicably abreast. What sufficient assurance have we, in the first place, that the Greeks did execute their works with such marvellously scrupulous accuracy, whatever might be the process by which they decided on relative dimensions? And in the next place, and, after all, supposing that they are to be, indeed, credited with such astonishing conscientiousness, is there reason to think that any real advantage would accrue therefrom? It may, indeed, be still further a question whether, if the practice of the Greeks was in their particular circumstances both possible and advisable, it may be advisable and good for us to attempt to follow their footsteps in this direction. But this consideration may stand over; it is due to their great and merited authority that we should do our best to verify what their system was, and what was their own appreciation of its importance and the importance of its minute application.

Certainly there is great preliminary difficulty in conceiving how minute accuracy, such as that of our example, can be of any real value under the conditions of the case,—even in the clearer Grecian atmosphere, the comparative smallness of even their largest structures, and the sharpness of the Pentelic marble which they employed in them throughout. Is there any reasonable ground for ascribing to the sense of sight, marvellous as the faculty is, a power of appreciating differences of dimensions by special pleasingness or the reverse, with a delicacy that would more than rival the discriminating power of the musical ear?

When two musical notes sounded together are produced by concurrent sequences of vibrations of the air, which are so related that the third vibration of one is constantly coincident with the second of the other, a pleasing effect is produced which we call consonance. No one supposes that our pleasure on such occasions is due to recognition of this agreement in proportion. The fact of such agreement is only to be made evident by careful experiment. The vibrations which are propagated from a pair of strings travel to the ear together, and their periodical coincidence produces satisfaction in the absence and independently of explanation, and a musical ear is offended by the fact, not by the scientific knowledge, of the minutest failure in preciseness of proportion. The bâton and the glance of Costa give sign when a semitone is false amidst the stormy melody of a full orchestra; but it would seem that the case must be very different with impressions which are propagated by vibrations, not of air, but of the luminiferous ether, and affect the eye concurrently from proportionate visible quantities. The eye has difficulties in responding to proportions which the ear is not troubled with.

The height of the Parthenon, from the line of step to the apex of the pediment, is proportioned to the breadth of the step, or stylobate, as 7 to 12; 12 : 7 :: 101·341 : 59·115 ft. The measured height (59·127 ft.) differs from that which is so brought out proportionately by the utterly insignificant dimension 0·012. But let this façade be seen in oblique perspective, when the stylobate would be foreshortened visually, as indeed it would be as most frequently seen, and what is then to become of any precise visual proportion? And even if we suppose the spectator to take up position directly in front, the visual angles under which he would receive impressions of height and breadth would be entirely different from, and therefore would entirely confound, the proportions of the dimensions as measured.

Let us take a still simpler example in another form. The height of a spire is precisely equal to that of a tower which it surmounts; any value which there may be in such equality may be expected to tell when we inspect a geometrical elevation, or when we view the structure itself from a very considerable distance, or from a station which brings the eye to an exactly intermediate level. But when it is viewed from any of the nearer and lower points of view which are chiefly to be considered, the upper division will be seen under a smaller visual angle than the lower, and the proportions of these angles will vary constantly as the observer shifts his position. What then, we may again ask, becomes of any value of approximation to equality of dimensions even within a foot or two, to say nothing of scrupulosity as to the fraction of an inch? Why may not the designer reasonably set aside respect for definite proportions altogether, complete his design by "scowl of brow," and settle dimensions for working drawings by scale of feet and adherence to the accepted divisions of the foot-rule?

If hesitation is felt in giving in to this conclusion, it will probably be on the part of those who, rightly or wrongly, are convinced that it was not so that the great designers of antiquity and (in their degree) of the Middle Ages also, worked, and that, considering results, it is scarcely safe to put aside the process which attained these results because we are incompetent to evolve the innermost secret of its importance. The stand which may be made on this line of defence is not to be treated contemptuously. We come here to the discussion not of the value of a theory in the first instance, but as to the matter of fact whether a theory was employed at all. If it is but in rare instances that Gothic architecture emulates the precise finish of the Greek, there is no lack of evidence in favour of a progressive consideration for systematic proportions, as when a preference appears for a triforium to be made just half the height of the clearstory in a bay, and both together just half the height of the central aisle; an arrangement which brings out a proportional sequence of 1, 2, and 3, between triforium, clearstory, and opening to the side aisle.

In the *Builder* of 12th June, 1880, p. 737, the interior dimensions of Henry VII.'s Chapel are given as,—length, 103 ft.; breadth, 35 ft.; height, 60 ft. It can scarcely be by accident that these dimensions are in continued proportion,—that the breadth is to the height precisely in the same simple proportion as the height to the length, viz., 7 : 12,—a proportion which, curiously enough, has other applications in the Parthenon besides that which has been quoted,—

7 : 12 : : 35 : 60.
7 : 12 : : 60 : 102·875.

The full demonstration that a system of proportion was employed by the architect of the Parthenon, and of his mode of applying it, would require the reduction to form of materials for a treatise which is now not likely to be written. The appendix to Mr. Cockerell's "Bassæ and Ægina" gives the general lines of the argument. It is enough to say that candid controversy is not likely to extenuate the significance of such a fact as that, in a building so pre-eminent for dignity of proportion as the Parthenon, no systematic regulation of dimensions by the foot-rule can be established, while adjustments by direct proportion meet us everywhere. To take one example,—the normal eastern abacus of the column is exactly one-fifteenth part of the breadth of the stylobate, and in this manner has a covert relation to the sum of eight diameters of columns and seven intercolumns which complete the plan of the portico. The stylobate measures 100 Greek feet, and it might be thought that 6⅔ such feet would be a convenient dimension, and near enough for proportion; it was not so thought, however, by Ictinus, and instead of the simple 6·50, he chose to take the trouble to adopt the accurate fifteenth, or 6·66. If any architectural member whatever might seem to invite adherence to one settled dimension, it is the abacus. Yet on the western front it is varied, and again by a recognisable proportionate adjustment.

It appears, therefore, that if these questions are to be made matter of controversy, the parties to it are likely to confront each other as advocates of these incompatible theses. On one part it will be maintained that the employment of a precise and systematic scheme of proportion would in no way assist,—in fact, would hamper,—the designer, and so far be detrimental to beauty of design, and therefore could not have been an instrument of such masters of design as the great Greek architects.

On the other part we should hear,—As it can be positively made out that the Greeks of the best time did employ a scheme of proportion in the final adjustment and scrupulously exact execution of their designs, the presumption from their success is decidedly in favour of the importance of such an instrument, if we moderns can only recover and master it.

This latter view is, in any case, consistent with what all will acknowledge,—that in architecture, science and art join hands; there is a scientific element in all arts, but in architecture especially is the union conspicuous, inevitable, salutary. Architecture, however, in its noblest forms, is still, is ever, an art specifically; and science must be content to occupy an ancillary position, with so much self-respect as not to endure being jostled aside into insignificance, if also with so much modesty as not to pretend to undertake the functions of imagination and to oust her from her chair. Architectural science has some cause for complaint in having been gratuitously called upon to disown any such presumptions and having to struggle against unauthorised imputations which are advanced in prejudice of her most legitimate claims. It is too often assumed, by doubtless unintentional injustice, that those who earnestly hold that there is an important place in architecture for a systematic theory of definite proportions, imagine and inculcate that a student, when equipped with such a formula, is prepared to decide the dimensions of a few leading lines of his proposed building, and then to expect the other proportions to follow as a matter of course. No theorist who is sufficiently sober-minded to be worth attention entertains a notion so preposterous: he would be quite as ready to assert that when Beethoven had decided that his key should be C sharp minor, and made progress with some half-dozen phrases, his sonata was so far a finished work that any accomplished contrapuntist could complete it as well as himself. He would be quite as ready, or rather quite as little ready, to propound that, when a painter had resolved on a certain key of colour, and set his palette and put in a few leading tints, difficulties were at an end, that imagination might go to sleep and beauty be trusted to evolve itself mechanically, to come out like a conclusion worked by Professor Jevons's logical machine.

What inevitable guidance may be involved in the adoption of certain leading proportions would seem at most to be of the scope and nature of those which the painter submits to when, having deliberately committed himself to certain conspicuous tints, he has thereby bound himself to keep the rest of his colouring in harmony with them as best he may, and, in considering how he may best, has to arbitrate among the artistic advantages of a variety of competing stratagems and combinations. The very selection of these dominant tints in the first instance is not arbitrary in any loose sense. It is in virtue of capacity for a lively conception of a suitable and expressive treatment of his subject, that proportionate combinations are recognised as emergent from the very subject itself; a certain harmony, a generative ideal, is begotten, so to speak, in his mind, and his problem is to realise it by working out the more recondite relations which are ultimately involved, but do not spontaneously declare themselves. The problems involved in the adjustment of proportionate forms by the architect are in strict analogy to those of duly balanced, relieving, contrasted, and generally related tints and tones in painting, and even of schemes and stratagems of composition. In how many a fine Italian picture, in how many a group of a Holy Family, do we observe the affection of the master for a triangular grouping, "the principle of the pyramid"? We may number example after example in the National Gallery alone; and how little way does the adoption of the principle advance a mere imitator to the position of a rival? Even so we find that while an identical proportion governs the ground-plan of both Parthenon and Theseum on their largest lines, their subsequent proportions are divergent with a decided ultimate contrast of effect.

The controversialist who should take the side of systematic proportion in architecture might be excused for confidently expecting to be allowed to insist on the well-known analogy of music; but here, again, he is stayed in his exposition, and surely to his very natural surprise, by a previous question, by what seems to have become such in this all-questioning age; whether, indeed, the proportions which are established between the notes of the accepted musical scale are not in the main arbitrary, and might not have been very different indeed, and quite as reasonably might not have been almost anything if it had happened to so please the original framers of a scale which, getting an accidental and unnatural start, has usurped authority, and imposed upon us a system which satisfies our ears indeed, but only by mere force of early and inherited habit. A suggestion such as this is serious and startling indeed. Somewhat is here involved which affects the entire scope of art; for music is the very citadel of those who hold that the foundations of genuine art lie deep down in the ultimate unity of nature, in the established relation

between our human nature and the universe around us, the laws of nature which are not more around us than they are within us. But the detailed and specific analysis of the natural basis of the musical scale would probably be out of place in the *Builder*. It is enough that it should be well understood that there are not wanting those who, in response to a challenge, would hold themselves bound to prove that, on the simple basis of two perfectly familiar physical laws, the musical scale of civilisation is deducible as being necessarily and inevitably such as it is in every particular, such and no other.

The word "controversy" has slipped into our exposition; but the purport of this is to state the question of proportion clearly, not to argue it out. And the expression is better left aside even when argument begins; it is better forgotten in the spirit of one of those paragraphs of Laurence Sterne, which make us tender towards his many lapses in more matters than good taste:—"So often has my judgment deceived me in my life that I always suspect it, right or wrong; at least, I am seldom hot upon cold subjects. For all this, I reverence truth as much as anybody; and when it has slipped us, if a man will but take me by the hand, and go quietly and search for it, as for a thing we have both lost, and can neither of us do well without,—I'll go to the world's end with him." Whether it will be necessary to go quite so far in the search for a complete elucidation of architectural proportion may happily be doubted, but it seems premature to expect that we are at present very close to the end of our journey.

THE CITY OF THE CALIPHS.

The reasons are more than historical which explain the peculiar artistic wealth and beauty of Cairo. It is not alone that Egypt in the past was, as it still continues to a great extent to be, the centre of the Mussulman empire, India, Persia, and Spain being but its extremities; it is not alone the fact that the rule of the Moslems is still exercised by the banks of the Nile, as it has been in unbroken succession since the first years of the existence of the Mahometan religion; it is not alone this fact from which it results that the whole history of Arab art can be traced in Cairo as it can be nowhere else; it is not alone due to the splendour of the court of its Mediæval caliphs and their wealthy subjects, or the architectural zeal of its pious rulers; Cairo, as a great rallying-point of the pilgrims who now for centuries have yearly visited Mecca, has at all times thus enjoyed the peculiar privilege of receiving within its walls, often as permanent residents, the artists and artisans of almost every portion of the Mussulman empire. Those who have closely studied the art of the Arabs, not only in its architecture but in the kindred arts, are able clearly to trace to this foreign admixture not a small influence in the artistic activity of the Egyptian capital. The Arabs, it may be remarked, have at all times been dependent on others for their artists and artisans. In the earliest days of their existence as a nation in Egypt they were entirely dependent for their architects and builders, even for their very materials, on Greek and Byzantine aid. Two centuries after the foundation of their religion, the great Mosque of Hassan, the earliest and, in its untouched splendour, the finest creation of pure Arab art, is the design of a Christian Copt. To this day, Lane tells us, the best builders and carpenters are invariably Copts, whose manual skill and superior dexterity have always been appreciated by the Arabs. But this dependence on others for their executive skill in no way thwarted, as might be imagined, the peculiarly original bent of Arab artistic genius. No art can be pointed to as more thoroughly the creation of those environing circumstances which, it has been urged, are the invariable influential factors in the art of every nation. In no feature is the originality of the art of the Arabs, acting under the influence of their daily needs, more clearly shown than in their domestic architecture, of which, after having hastily referred to the religious architecture,* it may not be uninteresting at the present moment to speak.

The domestic architecture of the Arabs is especially well represented in Cairo, as that city was, during the most brilliant period of its history, the capital, inhabited by a refined court. This period is contemporary with an age which we in Europe usually associate with the twilight of the Middle Ages, stretching as it does in contemporary English history over the period of the Conquest and the even ruder days of our last Saxon and Danish kings, the Crusades, and the still uncouth epoch,—however exquisite may have been its artistic creations,—of the Scotch and French wars of the three Edwards. Two centuries after its foundation, that is, in the ninth century, Cairo,—or more properly, Fostat, "the old city,"—under Mamoun the learned, the son of the famous Haroun al Raschid, was an active centre of learning and refinement. Mamoun founded a famous school of *savants*, whose studies embraced not alone astronomy and jurisprudence, but the natural sciences, chemistry, and algebra, the Arab names and terms of which we have to this day retained. It was Mamoun who measured the first terrestrial meridian, and to his reign we owe those Arab translations of Greek, Hebrew, and Latin authors, without which we should know nothing but from hearsay of many of the greatest classic writers. With the conquest of Egypt by the Caliph Moezz, and his foundation, in the middle of the tenth century (A.D. 969), of the existing city of Cairo, the splendour and refinement of the capital were carried even further. Its commerce was extended to the furthest extremities of the Mussulman empire; Cairo suddenly became the most important city of the East. In their wealth the caliphs revelled in the wildest dreams the "Arabian Nights" have pictured to our Western minds. The prohibition of the Prophet respecting the representation of animate beings, respecting gambling and the use of wine, were disregarded, and to these days of Arab splendour belong some of the choicest relics we possess of the art of the caliphs. Some slight insight into the luxury of the rulers of the time has been afforded by the publication in these pages not long since, of the inventory of the Sultan Mostanser's treasury,* and this lengthy list of costly marvels was, it must be remembered, but a portion of the contents of the royal palace. In Cairo and Damietta the looms were busy with the production of the most gorgeous stuffs, further enriched with the costliest embroideries. The goldsmiths and armourers found their most exquisite products never sufficiently choice for their fastidious clients.

In the midst of such a refined existence, and with surroundings so elegant, the character of the domestic architecture, it can be imagined, was scarcely less decorative. No wealth was too great to lavish on the interiors of their homes, where gilded and painted wood-work in delicate arabesque contrasted with the deep blue of tiles of the choicest design and hangings of the richest fabrics, floors of marble and mosaic covered with thick carpets, each marvels of decorative beauty. The wood-workers exhausted their utmost art in inlaying ivory and mother-o'-pearl and tortoiseshell in the most intricate incised designs; the simplest utensils were plated or damascened with gold and silver as richly as the goldsmith's art could devise. The choicest perfumes, of which the consumption appears to have been immense, were brought from the furthermost corners of the earth, and the poets of the day, in defiance of the Prophet's commands, sang in the sweetest strains that the Arab tongue has known, the praises of love and wine,† while in the description of their gardens the poets have been scarcely less ecstatic.‡

Sumptuous as were their interiors, no display of all this wealth was allowed to be even suggested by the exterior appearance of the house. Shrewd motives suggested this custom (one that gives its peculiar character to all Oriental cities) as calculated to allay the too familiar cupidity of the ruling powers or the violence of the populace. Bare grim walls, pierced by a few small grated openings, and, in the older houses, the doorways strongly protected by loopholes and overhanging machicolations, are all that present themselves on the exterior of many of the wealthiest and most delicately decorated of the old houses of Cairo.

Something of the splendour of the life of the Arab caliphs,—the contemporaries of our Templars,—may be judged by the following interesting description of the visit of an embassy from the Crusaders to Cairo, a description which, taken from the pages of the faithful old chronicler, William or Gulielmus, archbishop of Tyre (with whose pages Scott was so familiar), may not unprofitably be set beside the almost contemporary inventory given by us of the Caliph Mostanser's regal treasury:—"As the house of the prince is of a splendour such as has never been in our time seen, we will here relate with care what we have learnt from the trustworthy report of those who were present concerning his splendour, his incalculable wealth, and his extraordinary magnificence, for on this point it may not be uninteresting to possess some information. As soon as Hugh, of Cæsarea, and with him the Templar Godefroy, arrived at Cairo as ambassadors to the Sultan, they were conducted to the palace by a great number of servants, who preceded them noisily with swords, through narrow passages and dark rooms, where, at each entrance, troops of armed Ethiopians loudly acclaimed the Sultan. After having passed the first and second guard, they reached larger rooms, to which the sun penetrated; porticos supported by marble columns, gilt ceilings exquisitely decorated, and walls tiled in the most regal splendour. The whole was so beautiful, both in execution and in material, that the envoys could not avoid feasting their eyes on these marvels, the perfection of which surpassed all that they had ever previously seen. There were marble tanks filled with the clearest water, birds of every species and of varieties most strange, of divers voices, forms, and vivid colours, and especially marvellous to our compatriots. Thence some eunuchs led them to other chambers which even surpassed the first in beauty as much as they had done all that they had ever seen before. Here there was an admirable multitude of different quadrupeds, such as the most capricious brush of the painter, the licence of the poet, or the mind lost in the dreams of night, could alone create, such as the South and the East produce, and the West has never seen, and of which it but rarely ever hears mention. After many windings through various rooms, each of which contained ample to stay the attention of even the most indifferent, the envoys reached at length the royal castle, where an immense crowd of armed troops and satellites showed, by their number and costume, the incomparable glory of their master, and where every feature showed the wealth and unlimited treasures of the possessor. When the envoys were admitted and introduced into the interior portion of the palace, the Sultan rendered homage to his master, in a manner such as never person elsewhere had shown. As he bowed for the third time, laying down the sword which hung around his neck, the curtains, thickly embroidered with gold and choice pearls, draped about the throne in the centre of the room, parted with incredible rapidity and displayed the Caliph. His face was unveiled, and he sat in a pomp of costume more than regal on a throne of gold, surrounded by a small number of attendants."

Our English troops have occupied the citadel which Saladin built, the scene of all the marvels above described; but of the fairy-like courts which dazzled the Crusader ambassadors nothing but the tradition remains. Successive rulers have each left their mark on the palace fortress, and hand in hand the work of time and the work of man have aided each other in their mutual task of destruction.

The wealth of Cairo and its artistic activity lasted all through the thirteenth, fourteenth, and fifteenth centuries. At the close of the fourteenth century we have the evidence of the Florentine Frescobaldo, so Ebers tells us, that there were more ships in the port of Cairo than at Genoa, at Venice, or at Ancona. The sultans of Egypt were regarded as the wealthiest monarchs of the earth. Cairo during these generations was, indeed, the city of the "Arabian Nights," whose fairy tales the *improvisatore* told about the streets. With the close of the fifteenth century the trade and wealth of Egypt received its death-blow by the discovery of the Cape of Good Hope by Vasco di Gama, and with it the southern route to the Indies. Stoutly as the Arabs fought to defend their monopoly of the Asiatic trade, the age of maritime discovery had commenced; English influence on the oceans of the world was beginning to make itself felt,—the golden days of the

* See pp. 389, 452, *ante*.

* See p. 297, *ante*.

† By a somewhat grim piece of irony, our word alcohol is of Arab,—that is, Mahomedan,—origin.

‡ Carpet-gardening, that modern abomination, was, it appears, not unknown to the Mediæval Arabs, as we have mention of inscriptions being written in flowers.

classic Mediterranean were counted,—the untracked Atlantic was to draw trade into new channels, in which it has since never ceased to flow.

SIR EDMUND BECKETT ON ART, ARTISANS, AND ARCHITECTS.

It cannot be doubted that in many cases a discourse upon any subject whatever is liable to suffer serious injustice in a summary. Compression is apt to be destructive to gracefulness; it may even involve displacement and dislocation of the whole framework of an argument, and if clumsily performed, though with the very best intentions, may deliver it at last as incapacitated for defending and sustaining itself as if it had been systematically strained into distortion upon the rack of analytic controversy. And yet is a summary constantly no ill test of the coherence and cogency of an argument; of the validity of enunciations which are involved in the flourishes of rhetoric, or in taking plausibilities of fine writing which more bluntly challenge assent authoritatively by a string of dogmas that have as little to do with each other as with the conclusions which they profess to guarantee. It is less than usually perilous to criticise the views of Sir Edmund Beckett on science and art, reported as they are in our columns. The features of this report of what was said at a distribution of prizes to the St. Alban's School of Science and Art are sufficiently marked and characteristic to fully justify an attempt at interpretation.

When a greater novice at the Bar commenced his pleading with nervously repeating,—"My unfortunate client!" and then made a pause, a judge gave him the encouragement, such as it was,—"Go on, sir; pray, go on. So far you have the Court entirely with you." And Sir Edmund takes us with him quite as cordially when we read his introductory words:—"I must confess that I am in a state of extraordinary ignorance on the subject. Science is a very good thing, and art in its way a very good thing too. But I am afraid that the meaning of both words is a good deal less understood than it should be."

After these statements of the general principle, we have not long to wait for a particular example. What knowledge of art and what apprehension of the meaning of the word "art" may we discern in talk to this effect? "Art, if it means anything, means the art to do something; it may be a good or a bad thing." Who will not willingly make a present to the author of the definition of the art which means doing something bad? We may as reasonably define surgery as the art of performing operations which either correct or aggravate deformities; or perspective as the art of putting objects into perspective, either correctly or incorrectly. We go on to read, "The word 'art' may come to be associated by usage with a beautiful thing, or with what people call beautiful; but it is very difficult to say what is beautiful." So far, at least, we escape a definition of beauty to pair off with that of art. But we are left with the implication that whatever beauty may be, if, indeed, it is a reality at all, the association of the idea of it with that of art is accidental; the two have come to be associated by usage in a vague and ignorant way, no one knows why, and the speaker evidently least of all suspected that the usage was the inevitable outcome of a necessity to express in language an experienced connexion between matters of fact,—between exercise of the human faculties with a specific purpose, and a successfully-realised result in evoking the sentiment of the beautiful.

"There is no canon of beauty that I know of,—no rule except following the example of Nature. There is no unquestionable standard of beauty except Nature." This is promising; but no: nature proves as slippery as art, and the standard proposed is elasticity itself. "Nature never copies herself; there are millions of leaves on the trees, but I defy you to find two alike." He had endeavoured to impress this lesson upon workmen at St. Alban's Abbey, and upon others whom he had found too much given to imitation, and he had advised them to use a little more freedom. The advice is sound so far as it goes, but what becomes of the unquestionable standard as provided by ever-varying nature? The workmen are at last referred to some principle of selection which is not prescribed by an external norm. If the leaves of a sculptured oak wreath are not to be repetitions of a single model leaf, are they to be varied by copies of a number of model leaves? Even so the selection from the millions which are upon a single oak will not be guided by any standard that the natural oak supplies; the standard will be brought to the oak by the selecting artisan, and every different selector will make a different choice,—each by a standard of his own within his own mind,—better or worse; but it may be suspected that in the best wreath not a single leaf will be found to conform with preciseness to a single model among the selected. We are carried, therefore, to a very different point of view from that which confounds art with mere manual dexterity, and restricts the title artist to the ultimate manipulator of even the designs of other people. "It seems to me," said Sir Edmund, "that an architect is not an artist. An artist must do something with his fingers; he does not work with his mind only. An architect does not do anything with his fingers; he merely makes drawings [with no help from his fingers, Sir Edmund?], and tells other people how they are to do the work." So the architect, not without some natural surprise, finds himself landed one stage lower down than the bricklayer, or even, it may be, than the hodman, who does, indeed, do the architect's work going up and down a ladder as he pities the artist whom the architect is enjoined to venerate as his superior,—"the man at the top who takes the bricks and does all the work." What may have been the average age of the pupils of the School of Science and Art whom Sir Edmund Beckett was addressing we do not know, but we are glad to think that if his audience included a fair average of artisans, including carvers of the ornamental work at St. Alban's Abbey, his compliments would have been repudiated as fulsome by a silent protest of more than one or two. Speaking ever with the truest respect for the competent art-workman, the question is very unworthily revived as to the comparative merits of the composer of the overture and the conductor of the orchestra or the boy with the triangle,—between Handel at the keyboard and the indispensable man at the back of the organ doing his duty manfully at the bellows.

But, in truth, our complaint against Sir Edmund Beckett in this extraordinary deliverance is the same otter-like quality that Sir John Falstaff imputed to Mrs. Quickly: he "is neither fish nor flesh; a man knows not where to have him." He begrudges architects their claim to be artists, and disparages the importance of their work in comparison with that of an ornamental carver. Yet what is the worth and significance accorded by him to the title after all? A number of people, we are told, claim the title of artists with much better claim than architects. "Painters and sculptors are artists,—there is no doubt about them." Opera-singers, actors, and, "a little further down," hairdressers are adverted to rather ambiguously as, perhaps, having no more claim than architects to an honourable distinction; but the claim of dressmakers seems to be viewed more indulgently, while tailors are admitted to a common guild with sculptors and painters in a tone of warm cordiality. "Dressmakers are frequently called artists, and I know also that tailors are called artists. So they ought to be, because they produce very excellent results, and I am not sure but that when they have good subjects to work upon, they produce more successful results than architects generally." There is confusion here between "artist" and *artiste*; a very different thing,—different as a commissioner from a *commissionnaire*,—but let that pass; let it pass with congratulations to Sir Edmund on his good fortune in a tailor. What it would be interesting to know is, even in this example, his precise allocation of the coveted title of artist? With the guidance afforded us this lies open to contest between the constructor of the brown paper pattern, whose function has a dangerous analogy to that of the producer of working drawings, and his cross-legged colleague of the thimble and sleeve-board.

Our interest is chiefly with art, but if we can obtain any light on science incidentally, and as correlative to art, we may give it welcome; it is in making the best of such an enunciation as follows that our chance lies on the present occasion:—

"The real distinction between science and art is that art is uncertain, while science is certain,—or ought to be certain. Science is simply a fine word for knowledge, and knowledge is certainty, or such certainty as is to be achieved."

Too true it is, alas! that there is more uncertainty in matters of art than is desirable, but even in this statement it does not compare very disadvantageously with science,—with science that "ought to be certain," that gives us, not certainty, but only the best approximation to it that is to be got,—and that, being progressive, may give us a surprise any day. When we look back through the ages and contemplate the realised wealth in art which the world has possessed, and which in such important proportions is preserved, and that we rejoice in the possession of,—Sir Edmund Beckett must allow us to say when we recall how much of that wealth of art we owe to the genius of architects,—no feeling comes upon us of the unreality of our possession, of uncertainty as to the truth and beauty of the achievements of at least our predecessors. A foolish story is told of a mathematician,—one after another great name has been belied by the ascription,—having asked contemptuously what a great poem proved. Sir Edmund Beckett, by direct implication, assumes that works of art, and of architecture especially, do not not prove anything,—are afflicted with the essential weakness of wanting that certainty which in one fashion or another he makes, to speak logically, the formal or distinguishing part of the essence of the species science. But a great work of any art,—a work which establishes and approves itself as a great work, has a value not only as art, but in science also. It does prove something, and proves a great deal. It is a phenomenon which demands, and will reward, study, a fact illustrative of mental and moral revolutions which concern us quite as closely as the theory of earth tremors or of the aurora borealis. Nor is art without a retort upon science. It is the hope and happiness of the world that the world is accumulating scientific truth as well as artistic beauty; but it is notorious, and admitted by none more readily than by the scientific, that every age achieves renown by demolishing a mass of the scientific, or rather the unscientific, fallacies of its predecessor; that it also as unfailingly commits itself to a series of new misconceptions which only make the originators renowned to give a basis of greater renown for those who come after and expose them. One age held as a certainty that Nature abhors a vacuum; who shall say that the men of science who laugh at this dictum will not some day themselves be laughed at for having made too much of the principle that Nature delights in differentiation?

Sir Edmund, with a candour that does him credit and a simplicity which affords others innocent amusement, professes that he does not know for what reason architects wish to call themselves artists. "I have had a good deal to do with architects," he says, "and always found that for some reason or other they wish to call themselves artists, though I have never been able to make out why." It is always pleasant to be able to satisfy intelligent curiosity. The reason is this: it is only in virtue of having a just claim to the title of artist that one is justified in even pretending to be an architect, as distinguished from a builder or a contractor,—creditable titles both, but by no means committing their possessors to the serious responsibilities involved in a profession of fine art. Is it necessary to render these distinctions a little clearer? It would seem so, by the strange confusion of ideas implied in setting forth art and handiwork as convertible terms. The usage of the English language provides us with the words of cognate import,—"artisan," "artificer," "art-workman," "artist"; the last has superseded a somewhat awkward word, "artsman," which was in use by Lord Bacon and dramatists contemporary,—by Shakspeare and Ford. *Artiste* also, with the French pronunciation, may be considered to have been naturalised in England under the same pressure for requirement of a special term which has given us the indispensable *envelope* and the expressive *prestige*. It would be in vain to attempt to tie down these terms to strict definitions and mutually exclusive significations,—as vain as to pretend to attach them to absolutely divided classes of individuals. It is enough that we are guided in our appropriation and qualified application of them by regard to one leading consideration, the proportion in any given case in which manual dexterity is exercised under command of prompting mother-wit, of original

creative imagination. There are, of course, gradations of skill, and therefore of dignity, among the functions which are equally remote from demands on proper invention; but a special measure is required for every particular comparison, be it of carpenter with cabinet-maker, of mason with the sculptor's assistant who reproduces in marble the clay model furnished to him with the accuracy of a cast. When a wood-carver sets up before him the most carefully-executed drawings as his model, he may still throw so much individuality into his work while still within the prescribed bounds, as to evince originating power, and so far to claim to be more than a mere art-workman,—to be to that extent an artist. It depends on the value of the result whether his claim is better or worse than that of the carver at St. Alban's, the typical artist of Sir Edmund Beckett, when under suggestion he tries his hand at making the foliage which he is at work upon less servilely imitative. Grisi, in days now almost days of yore, sang every note that the composer set down for her,—those and no more,—while Madame Persiani was scarcely to be restrained in her exquisite embellishments; and yet was "La Diva" the greater artist, in virtue of the vigour of her sympathetic spirit and the unprompted graces of her expressive acting.

If the best works of architecture that the world possesses can be shown to have none of the characteristics of fine art,—to owe none of their value,—not, indeed, to owe their chief value,—to refined and appropriate expression, as graceful, as elegant, as beautiful,—nay, as sublime,—then is architecture, of course, no fine art at all, and architect and artist are inconvertible or contradictory terms. But otherwise, whatever may be the matter of fact in particular instances, and no one wishes to restrict the right of critics to have decided opinions of their own, there is assuredly the best reason in the world for that honourable aspiration to the title of artist which critics as independent as need be, and quite as disposed to be critical as they should be, are happy to think may be pronounced even in our own day to be abundantly justified.

FOOD FOR THE MILLION AND HOW THE PURCHASERS ARE CHARGED.

The question of the provision of sea fish for the food of the people is one that has again and again been mooted in our columns. It is the opinion of those who have deeply studied the subject that the influences which have hitherto kept down the supply of a cheap and nutritious article of food are not such as altogether court the daylight. We have heard complaints of the railway companies; complaints of the fish-curers; complaints as to the dangers of the sea; complaints as to monopoly of market. But never yet, so far as we are aware, has the matter been fully discussed on unquestionable *data*. The production of these *data* is one of the incidental advantages for which we have to thank the Select Committee on Railways. We shall be very much surprised if much of the information elicited by, or volunteered before, that committee has not a very different effect from that which was contemplated by those who offered the evidence. That such must be the case with regard to the evidence offered as to the cost of the grades and mineral stations on railways there cannot, we think, be the least doubt. In this case, however, we have to call attention rather to an accidental than to a direct outcome of the evidence.

The price at which railways carry fish is one of the points as to which much has been said, both *pro* and *con*. In perhaps no respect, except with regard to the carriage of passengers, is the speed attainable by the railway so directly important as with regard to the carriage of fish. Distances are long; speed, if a full load is made up at the shipping points, may be to a great degree uninterrupted; and on all the principles which have been lately advanced by the managers of railways as arguments for reducing charge (except that of sea competition), the remunerative cost of a full fish-train ought to be as low as that for almost any article of transport.

What is actually done is this. A ton weight of fish, according to the evidence of Mr. Robert Barclay, of Montrose, is carried 526 miles by the fastest trains in the world for 3*l.* 15*s.* This is at the rate of 1·7d. per ton per mile; and considering that the fish-train must return empty, or nearly so, is, we think, quite as low a price as any railway company can be expected to charge, unless, as in the case of the fishing-boats, a "bounty" were paid for the train by some of the capitalists interested in the trade. Between the deep sea to the north of Scotland and the London dinner-table the railway train is as essential a link in the communication as the net of the fisherman himself. And when we come down to the unit of retail purchase, the pound, we find that less than one halfpenny, or, more exactly, 13 thirty-seconds of a penny, represents the cost of railway carriage.

What do we pay for cod, for it is to cod that these calculations chiefly refer? Seldom, if ever, less, often we think more, than 1*s.* a pound. Towards this the iniquitous charges of the railway company make up, as we have seen, less than one halfpenny, actually 3·3 per cent. of the shilling! How is the rest made up?

The person who hands the fish to the railway company is the curer,—a small local capitalist, or, at all events, a local capitalist, whether small or large. His outlay consists in providing boxes, and boxing the fish (for which he pays at the rate of 9d. each, over a standard size), besides making an allowance, or bounty as it is called, of 14*l.* per boat for the season. Besides this he pays 3d. per cwt. cost of carriage across London to Billingsgate, and carriage of box to London, with a small return charge for the same. His receipt for this (of course not including the railway freight) is 5*s.* per cwt., or 17 thirty-seconds of a penny per pound. So railway and curer together do not come up to quite 1d. per pound for their share in the 1*s.* paid by the housekeeper.

The reader will now come to the comfortable conclusion that it is the fisherman, the bold and hardy mariner who provides boats, mans them, goes out, often with his life in his hand, and catches the fish, who has the lion's share of the shilling. Alas, no! He only makes up the even 1¼d.,—only receives for his own share 5*s.* 3d. per cwt. or 18-32nds of a penny per pound! And so fisherman, and curer, and railway, and carriage across London, all together, only come to 1¼d. per pound. Who has the other 10¾d.? And what are the services that he renders to the public for seven-eighths of the whole retail price of the fish?

The reply to that question was not brought before the Committee on Railway Rates. It is one which the purchaser of fish may, it seems to us, with some reason, rather loudly demand. Who gets the 10¾d. per pound? Who gets, and for what service, twenty times what the fisherman receives for his perilous toil? There is, or at all events there used to be, such a thing as a sense of justice,—as a measure of proportion, on the determination of retail prices. But here we have something so outrageous as to be incredible, on any less unquestionable an authority than a Blue Book. A halfpenny out of the shilling for the fisherman, a penny more for bringing the fish from John o'Groat's to Billingsgate, and tenpence halfpenny for bringing it from Billingsgate to the dinner-table! Is this to be tolerated? Again, we know that the price of fish is subject to great and sudden rise, in case of stormy weather. Less then comes, no doubt, to the market. But does the fisherman get more? We doubt it. As far as the evidence before Parliament goes, he takes the rough with the smooth, and only gets 9d. per cod whether he brings in more or fewer. If on any of the other fishing stations there is a variation in the price, we may be tolerably sure that the fisherman gets anything but the lion's share of the augmentation. If his prices were doubled, it would not affect the cost of packing or of carriage. We should have cod brought to London for 2d. a pound instead of for 1½. But is it not out of the way for us to pay 1*s.* 6d. for the same, on account of stormy weather?

It really does seem as if this was one of the abuses which can hardly be maintained after it is dragged into the full light of day. We saw, some little time back, how the Londoner was benefited by the conduct,—at once businesslike and patriotic,—of a noble marquis, in selling his own coal. We should venture to suggest that any patriotic Scottish nobleman who should put himself at the head of a movement for enabling the fruit of the toil of Scottish fishermen, which comes to London for 1¼d. per pound, to reach the fish-kettles of the mass of the London population at something like a proportionate price for the trouble and risk of retailing, would ensure a double popularity. Whatever were the gratitude felt by the fishermen and their families,—a gratitude that might very likely be stimulated by the reception of something more than the present pittance for a perilous toil,—we think we could answer for the way in which the movement would be hailed by the London householder. Best cod at 3d. per pound would be a welcome and a health-giving addition to many a table. And who shall say, in the face of the above evidence, that 3d. a pound does not leave an ample margin for the retailer of fish?

CHRISTIANITY IN BRITAIN IN ROMAN TIMES, WITH REFERENCE TO DISCOVERIES AT ST. MARTIN'S CHURCH, CANTERBURY.*

The subject of my paper is one of no small interest in relation to the much-discussed subject of the origin of Christianity in our land. It is no less than a notice of what I believe to be the discovery of a portion of a Christian church erected in Roman times.

I propose to describe the discoveries in detail, but, before doing so, it may be well to make some introductory remarks upon the subject of such deep moment to us all,—the commencement and growth of the Christian faith in our country.

Were we to believe implicitly the so-called writers of ecclesiastical history, Britain must have been well advanced in Christianity when the Saxons landed on our shores. Alas! that it has to be stated. These records,—of later date in all but every case,—bear the attendant stamp of the later date. Fact gives place to fiction, where history is lost in legends so unreal that we have to pause to consider how much is true and how much the results of the distempered fancies of men living too much alone, whose sense of the marvellous caused sober realities to be set aside, or who believed that they were rendering service to the Church by the exaltation of some dogma or some human authority.

So early a date as the year 150 is assigned by the authorities whom Bede follows for King Lucius's request to Pope Eleutherus to "make him a Christian," and this is taken as a commencement of Christianity in England. The dates given do not accord; and the existence of King Lucius at all has yet to be proved.

The Diocletian persecution is a known fact, but there are some real reasons for doubting whether or not it ever penetrated into Britain. At the time the country was under the tolerant government of Constantius, or when the usurpation of Carausius had alienated it from all central rule; and this was followed by that of his successor, Allectus. It is hardly possible that the flame of persecution would have been kindled in our land at the Imperial bidding when no other decree would have been heeded. Nevertheless, more than one chronicler relates the martyrdom of the pious Alban at Verulanium during the Diocletian persecution, when churches were destroyed and holy men were slaughtered.

Alban suffered with all the surroundings apparently inseparable from a monkish legend. The river Thames dries up at his approach to the place of martyrdom, according to Gildas; although Bede's authorities are content to make the miracle occur at the stream between the city and the hill of execution. A spring bursts forth from the spot. The eyes of the executioner fall out!

St. Joseph of Arimathea is said to have settled at Glastonbury; St. Paul to have visited Britain. The King of Britain slays with his own hand hundreds of the heathen Saxons at the battle of Old Bath Hill, his shield being guarded by a statue of the Blessed Virgin!

Thus do the histories of the time, or those written closest to the events, teem with improbabilities, and give reason for the doubt expressed by so close an observer of archæological facts as the late Mr. Thos. Wright, who says, "We seem driven by these circumstances to the unavoidable conclusion that Christianity was not established in Roman Britain"; and again "not a trace of Christianity is found among the innumerable religious and sepulchral monuments of the Roman period found in Britain."†

These are conclusions too hastily arrived at; and antiquaries should ever remember that

* By E. P. Loftus Brock, F.S.A. Read at the meeting of the Kent Archæological Society at Maidstone, Aug. 2, 1882.

† "The Celt, the Roman, and the Saxon," pp. 353, 355.

their facts of to-day may receive fresh additions and illustrations by the discoveries of to-morrow. The most absurd-sounding of the old legends may contain a germ of truth under their later dress. Strip it off the latter and we obtain the right view of the case. Thus, at St. Alban's we find the appearance of the country,—even to the pool of water,—agreeing with what we can trace there to-day, while the local belief in the reality of the proto-martyr of England is shown by the continued existence of a costly church on the spot named by tradition as that of the Martyrdom. A battle was fought at Bath Hill, and it is very possible that a British chief or ruler was there. The legends of St. Paul and of St. Joseph must be taken with all caution; but their remaining as local traditions for so long a period is a very noteworthy fact. The old historians render evidence, however, of greater weight and importance to our inquiry, bearing, as it does, much of the impress of reality and truth.

St. Athanasius, in the middle of the fourth century, speaks of British bishops being present at his trial at the Council of Sardis. Three British bishops are recorded to have been at the Council of Arles, A.D. 314. Their names have subjected them to questioning criticism, which, if it stood in relation to this event alone, would be worthy of all attention. The fact remains that, as soon as history becomes reliable, we find that British bishops are actually in existence in various parts of our country. There was apparently one see independent of Rome in Cornwall up to the tenth century, when Athelstan, bishop of Bodmin, was consecrated by Archbishop Phlegmond, A.D. 904, and the see became subject to the Saxon Church. We hear of bishops of the British Church early in the sixth century subject to the Metropolitan of Caerleon. The foundation of the Cambrian sees may be lost in obscurity, but their continuance is a fact to this day. From the fourth to the sixth century, when reliable history comes to our aid, is not long; and it is more reasonable of belief that the bishoprics then in existence were but the continuance of foundations of an earlier period, than that they were unrecorded foundations of the later time.

Statements by reliable and contemporary authors, rather than those of later dates, may also be appealed to in a few passages, which I will rapidly glance at. Origen, in the third century, asks, in his Fourth Homily on Ezekiel, "When, before the advent of Christ, did the land of Britain agree in the worship of One God?" Tertullian's well-known statement, "The parts of Britain inaccessible to the Romans are subdued by the truth of Christ," bears the stamp of true history, and is in harmony with the archæological relics.

There is evidence of still another kind in the old histories. Incidentally, we hear of considerable intercourse between the churches of Armorica, Ireland, Cornwall, Scotland, and the north of England. We find this as soon as history becomes reliable, and we may readily believe that this too was but a continuance of something older rather than something of recent occurrence.

The two visits of Germanus, bishop of Tours, to Britain, the mission of St. Patrick to Ireland, and that of Bishop Palladinus to confirm the faith of the Scots,* all point to the existence of Christians in these countries, and at many points of them, and may be accepted as the reason for the existence of such large numbers of British Christians of the sixth and later centuries. We are thus prepared for the congretions in the Banchors of Ireland and Wales, the missions of Columbia and of the Culdas, and for the flourishing Christian churches of the land which appear to be separate and distinct from Saxon England.

The evidence of Christians at an early date is also shown by the rise and progress of the Pelagian heresy. The Church must have possessed a vast number of members, for the errors of the time to be so recruited from their midst; and it may be noted that when Germanus strove so ably to refute the evil, we hear of him not at one spot of Britain only, but at Verulanium, Oxford, and in Wales.

I will now proceed to describe actual relics of early Christian times that have been revealed through the aid of the science of archæology. It may, however, be readily supposed that the extent of Christianity cannot be judged or measured by these. The decay of time may account for the loss of many. Many more may yet remain to be discovered. We may suppose, too, that there may have been many Christians, and but few indications of their presence that could survive to our time. Indeed, there may have been but few outward signs even at the time referred to. "Though we have known Christ after the flesh," says St. Paul, "yet now henceforth know we him no more."

The sentiment was doubtless that of the Church for a long period; and it is quite possible, under its influence, for there to be a large and flourishing congregation of Christians with but few tangible evidences of its existence.

So early as the latter part of the last century, a Roman villa was discovered at Frampton, Dorsetshire. It was evidently a building once occupied by a wealthy owner, for the pavements were of great beauty. On one of these, filling a small semicircular apse, the Christian monogram was found, worked in mosaics, forming a portion of one of the most elaborate of the pavements; while, in another pavement, there is a medallion portrait, with a mild and amiable expression which is recognised by some as a portrait of Our Blessed Lord.

The Chirro is an early rather than a late symbol used by the Christian Church, and its presence in a wealthy Roman villa is a significant fact. The discovery attracted much attention at the time, but being an isolated fact, it was doubted, or believed to be a later insertion. It had almost passed out of memory when attention was again called to it by my friend, Mr. T. W. Grover, in 1867.* This was followed by the discovery, in 1864, of another Roman villa at Chadworth, in the county of Gloucester,—so favoured by the Romans. Here the monogram of Christ was found carved on two of the steps as if to mark the sure foundation of the building. A hexagonal bath, of remarkable construction, is believed, and with very weighty reasons, to have been a baptistery.

Mr. Grover enumerates, among other precious relics of early Christianity, the presence of the sacred monogram on two plates of pewter found in the Thames at Battersea, now in the British Museum, and points to the numerous coins of Constantine, having the labarum, and those of Magnentius with the Chirro. With so many signs of the Christian faith, now in the ascendant, circulating among them, our surprise would be rather if there were no Christians then in our land, instead of at their presence. It can hardly be doubted but that many of these coins were minted in Britain. In addition to these, there exists at Alnwick Castle a Roman urn of the well-known Castor ware. It has the sacred monogram laid on in white slip. I am indebted to Mr. Roach Smith for the reference to this evidence, and he adds that it is the only object having reference to Roman Christianity known to him.

At a meeting of the Society of Antiquaries held very recently, a remarkable discovery at a Roman villa at Fifestead-Neville, Dorsetshire, was reported by Mr. Middleton. Among the excavated remains of the building, two silver bracelets were found. On one was the sacred monogram; it occurred again on the other in slightly different form, with two palm-branches left and right.

I have confined my references to examples that are beyond doubt or question, to the exclusion of many that cannot either now be referred to, or which are of doubtful or of Mithraic import. Time will admit only of passing reference to the Christian monogram on the tomb of Carausius, at Pen Machno, one of a long series of Christian monuments extending quite into the later Celtic style of the Welsh church; and to the Scottish series, which has exactly the same sequence. The Cornish examples go over the same ground, and prove the existence of Christianity from early to late times. The Rev. S. M. Lach-Szyrma has recently called attention to the presence of a monument with Roman lettering, most probably of Christian origin, in St. Hillary Churchyard, close to another of Celtic-Christian style, with others of the Early Gothic period, as illustrative of the continuance of a Christian cemetery on the same spot from Roman times to our own day.

I have briefly scanned some of the salient points of the old chroniclers. There are others in relation to the building of churches, but it may be needful, for brevity sake, to refer to but three of these.

St. Augustine (A.D. 602), "being supported by the king, recovered at Canterbury" a church which, he was informed, had been built by the ancient Roman Christians, and consecrated it in the name of our Holy Saviour, God and Lord, Jesus Christ, and there established a residence for himself and his successors.* This is as direct and clear a statement as can well be desired, made by the most judicious of all our ecclesiastical historians, the Venerable Bede, and from records which are carefully noted in the prologue to this book.† "Traces of the assistance which he derived from Canterbury are perceptible in the minute acquaintance which he exhibits not only with the topography of Kent, but with its condition at the time when he wrote." The finding of a probably-ruined building on the site of the intended new church could hardly have been an invention, while the fact would have been sufficiently noteworthy to be recorded. We may, therefore, conclude that the Roman origin of Christ Church, Canterbury, is an historical fact, as well made out as any fact of such a remote period can be. The men of that ancient city, the cradle of our faith, so to speak, may well congratulate themselves that the sounding forth of Christianity from the cathedral, hardly interrupted from the days of Augustine to our own, had its beginnings at a still earlier date. An historian entirely of another type,—Thorn, a Benedictine monk of St. Augustine's, at the end of the fourteenth century,—records:—"There was, not far from the city, towards the east, as it were midway between the Church of St. Martin and the walls of the city, a temple or idol-house where King Ethelbert, according to the rites of his tribe, was wont to pray, and with his nobles to sacrifice to his demons and not to God; which temple Augustine purged from the pollution and filth of the Gentiles; and, having broken the image which was in it, changed it into a church, and dedicated it in the name of the martyr St. Pancras, and this was the first church dedicated by St. Augustine. . . . While Augustine was celebrating mass for the first time, the devil, seeing himself driven out from the house which he had inhabited for long ages, tried to overturn from the foundations the aforesaid church, the marks of which thing are still apparent on the exterior eastern wall of the above-mentioned porticus." We have in this doubtful-sounding history a good example of the records of the time. The position given for the building is exact. The legend can hardly be believed, but yet it is referred to on the spot now, as recorded 700 years ago. The site is waste, and a ruin only remains there; but in the modern boundary-walls, on the north-east side, a channel in one of the stones was shown me in the summer of this year by the son of the proprietor of the site, as being the veritable claw-mark of the Author of Evil. If the legend has thus survived for so long a time since it was recorded by Thorn, who can doubt but that it may have existed long prior to his time? We owe to the zeal of the Rev. Canon Routledge and the painstaking efforts of this Society singular archæological evidence. The ruins are those of a Roman building.

To refer again to the Venerable Bede, and to the passage so well known to us. "There was on the east side of the city a church dedicated to the honour of St. Martin, built whilst the Romans were still in the island, wherein the queen, who, as has been said before, was a Christian, used to pray." It is in this church that the recent discovery of Roman masonry has been made, which is the immediate reason of my paper.

These three structural records have been referred to so often that I hesitated to bring them forward again. I have done so, however, since they have never been thus grouped together, and my purpose is two-fold. While they indicate the Roman origin of two of the buildings to be passed in review, they afford us evidence not a little startling of the extent of Christianity in Canterbury in Roman times. Here, in a distance hardly one mile from one site to another, we find reliable record of no less than three separate and distinct Roman churches, two being by historical evidence; the third, at St. Pancras, by that of the building itself.

* The date is given in the Saxon Chronicle as 430.

* Pre-Augustinian Christianity in Britain.—Journal of the British Archæological Association, 1867, p. 223.

* Bede's Ecclesiastical History, ed. Bohn, p. 60.

† This has been pointed out in the preface to the edition published by the Early English Text Society. The quotation is from this preface.

I need dwell but briefly on Canon Routledge's discoveries at St. Pancras.* The building has a nave, 42 ft. 6 in. long; a south transept, central with the nave, 10 ft. 6 in. by 9 ft. 6 in. Another building, of exactly the same size, at the west end, contains the entrance, an eastern apse opening into the nave, and flanked on one side, where we should look for the chancel arch, by the base and part of the shaft of a Roman pillar, evidently removed, however, from some other building. The discussion as to the age of the walling has been materially lessened from the fact that the mass of the western wall has been visible above ground for many years, and has always been considered of Roman date. Attention was directed to it by the late Mr. J. Brent, F.S.A., who has often spoken of it to me. It was pointed out to the members of the Royal Archæological Institute as a Roman wall by Mr. J. Parker, C.B., than whom no man in England is a better judge, from his acquaintance with brick buildings so common in Rome and so unusual in England. The concrete floor, too, of the church was pronounced to be similar to what is found in Roman villas by Mr. Roach Smith, F.S.A., long before the church-like plan of the building had been developed. The walls of the church are of brick and flint, and have been altered, probably in Saxon times, the large chancel-arch having been lessened in width, and another opening made into the transept. It may be noticed, too, that the western building of brick has a straight joint where it abuts on the western wall of the church, as if the former were later in erection than the latter. Still, minute inspection will show that the walls of this western building,—tower or porch,—has been not only plastered, but painted in bright purple-red Roman fresco. A part of it is still visible in the old west wall beside the threshold of the Norman western door leading into the church, where it was met with during the recent excavations, having been buried beneath the level of a later floor.

To pass to St. Martin's. Probably few buildings have been more frequently scanned; probably few in a more superficial manner. The result is, that its true evidences have been passed by unrecognised, the popular belief being that the walls are Early Norman, with a later east end; the flat pilaster buttress of the nave being considered as conclusive in determining the date. No statement is further from the fact, for there is nothing whatever of Norman work in the walling except very apparent insertions. We may search in vain for the inner and outer casings filled in with rubble, so common in Norman work. There are no small worked quoins, with Norman diagonal tooling; no grouted work, and no thick walls such as the Normans always built. On the contrary, the walls at once testify that they are different from those of an ordinary church by their unusual thinness,—a characteristic rather of some modern than of ancient churches. They average 1 ft. 10 in. only in thickness. This dimension must at once attract our attention, for it is very usual in the walls of Roman villas, where we meet with it over and over again. The materials, too, are similar, resembling what we find in villas,—a mass of solid rough walling, partly of brick, partly of stone, evidently intended to be plastered originally on both sides, and in the case of the nave of the church, built with sea-shore mortar of such remarkable solidity that, although the walls are thin and lofty, yet they have sustained the thrust of the later high-pitched roof of Gothic times without injury, and they still stand solid and sound. The flat buttresses at the south-east angle, and the central circular buttress of the nave, are of stone up to a certain height, then of brick; above this they have been tampered with. Those of the south-west have disappeared during some rebuilding of early date. One only of the north-west angle buttresses remains, the other has been cut away. It is constructed for the most part of stone from some other Roman building, and roughly cut to fit into its present position. The neatness of the evenly-cut beds of earlier date contrasts with the roughness of the later work. It was within the church that the Rev. Canon Routledge's first discovery was made. His curiosity being excited, he had a portion removed of the modern wall framing near the south-east angle of the nave. Here, hidden behind it, a portion of the original plastering of the walls was met with in position. It is Roman plastering formed of pounded brick. By Canon Routledge's invitation, I had an opportunity of inspecting this remarkable evidence of the Roman date of the building. I placed a specimen that I removed from the walls with another which I had brought but a short time previously from the Roman villa at Wingham. They are identical in texture, and but that I had marked the latter, which is thinner, I should not have been able to distinguish between them. This plastering has been found internally on several portions of the nave walls, both north and south, but not quite up to the west end. During a recent visit I found that the south walls of the nave had also been plastered, externally, with mortar of pounded Roman brick, in larger fragments than to the interior, and a portion of it is still firm. Its course may be traced, and this indicates the portions of walling that are original, and those which have been rebuilt. It can be traced to the lower part of the central buttress, but not to the upper, and it disappears when near the west end. The western part of the chancel wall, south side, is wholly of brick; the sea-shore mortar is not so apparent, and the Roman plastering has not been met with either internally or externally. It may, therefore, prove that this portion, like the brickwork of St. Pancras, is of slightly later date, and that we have in St. Martin's an example of a church to which a chancel has been added. Whether or not this chancel ended originally in an apse has yet to be proved, the present square east ending being of the thirteenth century, and an extension of the original building. On the south side two curious openings call for remark. One is a square opening, having a massive lintel of green stone above, and an equally solid threshold below. This had been walled up in Mediæval times, in part, and used apparently as a low side window. Traces of wall painting were found on the later enlarged jamb on the west side. To the east of this a small semicircular arch is to be seen, recently revealed by Canon Routledge. This may be of later date than the former opening, for, while the eastern jamb appears solid, and the bricks which compose it range with the others, that on the west side is not so regular, and the arch itself, of thin stones, seems as if it had been inserted in an older wall.

St. Martin's Church consists of a nave, chancel, a western tower of fourteenth-century date, and a vestry and organ-chamber of more or less modern work on the north side of the chancel. In seeing much modern work within the building, we cannot but regret that the golden opportunity afforded by the ordeal of restoration some years ago was not taken advantage of for a thorough survey of the fabric. The Roman work is of late rather than of early date.

To conclude. We have at St. Martin's the concurrent testimony of history and of the building that it is of Roman date. We have, also, the close analogy of the work with that of St. Pancras, even to the differences of construction there visible. In both buildings alike the orientation, which is perfect, points to the fact that these two Roman buildings were originally intended to be churches, and that we are not regarding the remains of buildings originally erected for some other destination, used at a later period for sacred worship.

The gratifying nature of this evidence will commend itself to many a lover of our old English churches. Probably to no one parish church has more interest been shown than to the little Church of St. Martin, on the hill side overlooking Canterbury, where at least the site and the surroundings have been recognised justly as the same as when Queen Bertha worshipped here, and St. Augustine commenced his momentous mission. This interest may now be very greatly increased when weighty archæological reasons are thus rendered to justify our belief that the fabric is actually the same as in their day, and that we have in it, as at St. Pancras, actual remains of a Roman Christian church.

The revealing of traces of two Roman churches where none have been hitherto noticed is a remarkable archæological fact. It is sufficiently gratifying to show that, while we are spending pleasant holiday hours, we are recovering a portion of the lost history of our land. No sooner is the subject noted than its scope enlarges. St. Pancras shows in its eastern apse that this feature was of earlier date than at first we may have been inclined to believe, and that its presence here need not be attributed to any importation either from the Western or the Eastern Church. I have already spoken of the semicircular apse of the Roman villa at Frampton, a feature of constant occurrence in such buildings; but we owe to Mr. G. Dowker, F.G.S., evidence of its existence on an extended scale. He opened out the site of the church within the Roman station at Reculvers in 1877, and proved beyond doubt that the building in all its leading lines was Roman. It has an eastern apse, a nave, and side aisles. The walls of all are of this early date, and the flooring is so also. In the present condition of our knowledge we must believe that this is a Roman building. A basilica it may be, for we can hardly believe that in the third or fourth centuries the centre of a new Roman station could be chosen for the site of a Christian church. So church-like, however, is the plan, that it affords us good evidence that the church-builders did at once follow it as a model in Britain, as we know they did on the Continent, and we may, therefore, believe that the builders of the apse of St. Pancras had their model at hand. The plan, too, of the ancient church of Brixworth, Northants, with its nave arches neatly turned with Roman bricks, and its so-called three periods of Saxon work, is so like in its leading lines to the plan of Reculvers as to raise the inquiry in our minds whether or not we may not find there also traces of another Roman Christian church.

* The record of the excavations at St. Pancras is given in a paper by the Rev. Canon C. F. Routledge, in "Archæologia Cantiana," vol. for 1882.

AN IRON LIBRARY.

For the last twenty-five years there has been a small literary army at work, under the auspices of the Philological Society, to compile a dictionary of the English language so comprehensive that not only every word now in use, but every word that has ever been in use, should be duly registered in it. To use Archbishop Trench's figure, the intention is to draw a sweep-net over the whole surface of English literature. Herbert Coleridge was the first editor of this coming dictionary, and under him plied about 150 volunteers of the first literary water. After his lamented death, Mr. Furnival took the helm, and was assisted by a volunteer staff as brilliant and enthusiastic. And now Dr. Murray, of Mill-hill, guides the gigantic undertaking. No fewer than 754 volunteers are now engaged in reading and transcribing, and in other ways furthering it, under his directions. When the scheme was handed over to him two tons weight of material had accumulated, and the question arose where was this amount of literary stock to be housed. In this month's number of *Frazer's Magazine* there is a minute, learned, and picturesque account of the whole endeavour, under the title, "English: its Ancestors, its Progeny," by Miss Humphreys, which tells us Dr. Murray met the difficulty by the erection of an iron library:—

"He orders an iron library, therefore; he puts it, too, precisely at his house-porch. His house,—a quaint timber-layered, white-painted old residence at Mill Hill . . . . is just added to, in this magical way, by an extra apartment, and all is complete. The bit of land thus covered was a sunny piece of garden before. It was a part of the village. The small-paned windows of one side of the house looked at it, and looked at a gate that led at once into primitive shop-keeping and close gossip, into all the hot sleepiness and settlement of comfortable and contented rusticity. But now the small-paned windows are blocked up, or nearly so, by the corrugated sides of the new structure; by its sky-lighted roof, sloping and spreading; and there is no view of opposite gable and branch-top, of loitering neighbours, of the rare interlude of a vehicle passing by. The scriptorium, become the object of the life to be passed in that tranquil suburban home, is become also the main object, in the other sense, to be looked at from the home; and there it is, in its so many feet of flat dull grey, its so many feet of flat dull brown, whilst yet the uncomely stiffness of it, the uncomely straightness of it, is just redeemed from all of prosaic utilitarianism by the fringe of ferns, self-sown and graceful, that decorate its feet, by the occasional chirrup and song of free and happy birds."

In this library, or scriptorium, as it is called, which is lined with rows and rows of plain deal pigeon-holes and shelves, and furnished with plain deal tables, sit a few especial workers. The main body of volunteers do their work in their own homes, where each reader is furnished with a packet of slips printed with the title of the book that is to be perused, the date, and initials for volume, chapter, and page. About 1,000 of these slips are returned daily, filled up

with more or less neatness and accuracy. We quote the following passage with pleasure:—

"These are slips, contributed by an architect, to represent architecture, as beautifully copied,—in red ink the title, in black ink the extracts, that the contrasts may relieve the eye,—as if each were the under-writing of an exhibited design, with no item too insignificant to get reverent place upon the plan. One Iohn Shute's book, these quotations are seen to come from, as they enforce attention:—John Shute, Paynter and Archyteck; getting imprinted at London in Fletestrete, nere to Saint Dunstan's Churche, by Thomas Marshe, 1563; calling his work 'The first and chief groondes of architecture used in all the ancient and famous monymentes; with a farther and more ample discourse uppon the same than hitherto hath been set out by any other." It is an illustration, than which nothing better could come, of the way all artists in their own art, all scientists in their own science, are rallying round the Scriptorium and its master, pouring in his stores their own special knowledge of their own special by-ways, that what each can furnish shall have no failure, but shall help, at its best, to bring the grand outcome of modern philology to good completion. So good an illustration, in fact, is this individual contribution that, lingering over the careful pile of it, turning to extract after extract (they count up nearly to a thousand), it is felt to be a pity they should lose their painstaking presentability,—getting worked in and woven in and out, among the 1,100 pigeon-holes, being picked out by process and process, treated by every article of the code,—a score only, possibly, in each intricacy of letter A, a score or two in B, a score more in other divisions of other letters, and so on through,—and, some way, this pity gets itself to some expression, 'Yes,' are Dr. Murray's words, there being quickness with him to follow the thought of it, 'these quotations are to be valued immensely. They are lovely.'"

THE LIVERPOOL WATER WORKS.

The giants and elfs who, in bygone days, were supposed to haunt the peaks and cyms of the Welsh mountains, had the credit of many deeds, good, bad, and very indifferent, which, however, often showed a decided taste for engineering. The erection of strange old bridges, placing huge boulders on out-of-the-way places, and mischievous tricks with water, were ascribed to mysterious powers or to the Father of Evil himself, and explanations,—satisfactory enough for an age of timid inquiry,—were thus given, that checked any research into plain and half-forgotten facts.

But, as the dreams and fables of such times were often the weird dressing of what was, or had been, a reality; so the achievements of modern times have often been truths stranger than the fictions they have more than rivalled, and in the country where the antiquity of our island has so long preserved its romance and its traditions, some of the most noted feats of mechanical greatness have been performed. The Ruabon aqueduct, the Menai bridges, and the Holyhead road and rail have each their fame.

In one of the most secluded valleys of Central Wales, where road, in the usual meaning of the term, has never been, and where rail ought, perhaps, never to go, a great work is proceeding: a valley is to be flooded and a lake formed that shall rival the Llyn Tegis of Bala in size and beauty. The invisible elfs mentioned above would, no doubt, have done such a job in a night, and the first result attributed thereto would have been the discomfiture of some luckless swain who had transgressed the unwritten laws of superstition; but in sober reality many days and nights, for some years, will have to be spent in very prosaic labour before the pure waters of the Berwyns and the Cynynion can flow to be a blessing to the people of Liverpool.

For some years the question of water supply had been urgent with the authorities of that town, and had been discussed with all the various opinions and crotchets of people and parties; the advice of the thoughtful, and the clamour of the thoughtless; the opinion of the expert, and the theories of the incompetent. With some, the Mersey (like the camel to the Arab) was equal to any need. To others, a "deep well" gave hope of abundant supply, but at length the present scheme was approved and decided upon.

The western end of the Berwyn mountains, which form the great water-shed of Central Wales, separates Montgomeryshire, on its northern extremity, from Merionethshire. Shrouded in mist, and watered by almost continuous rains, the solitary peaks seem nearer akin to the clouds than to the dry land. The Dee and its tributaries are fed from the northern slopes, and the numerous streams that run down the southern slopes find their way to the Severn. About half way along the mountain road from Bala station to the village of Llanwyddin (some twelve miles south), several of these streams originate and ripple down the cyms and hollows, joining below to form the river Fyrnwy, sometimes spelt Vyrnwy, and pronounced Vern-yew. The valley through which the infant river meanders is formed by the great spurs or outliers of the Berwyns. On the east, Cyrnia Nod (2,188 ft.), and other mountains of lesser height, form a vast barrier, whilst on the west Carreg-y-big (1,937 ft.) and its outliers hem in the valley, which, at its upper end is divided by a prominent mountain, Allt-yr-Eryr. From this point the valley opens out and has a level alluvial bottom covered with pasture, and in wet seasons entirely overflowed by the river. About two miles along, the small village of Llanwyddin is situated on the slope of the eastern mountains; and again, another two miles, and by the old farmstead of Cynon-isaf, the hills turn and approach each other, thereby partially closing in the valley at its southern end, and leaving a comparatively narrow opening, through which the river emerges, and where the dam will be placed.

From this point, looking northward, the view is very beautiful; the valley beneath, with the rising mountains on either side, and the prominent Allt-yr-Eryr in front; the village about half-way among the trees on the right, but otherwise scarcely a touch of art to vary the native solitude of the vale, which, reluctant as one feels to see it altered, will have a fresh charm when it becomes Lake Vyrnwy, or the great reservoir of the Liverpool Corporation Waterworks.

But the picture of solitude and seclusion is soon changed, if one looks to the immediate surroundings of Cynon-isaf. Engine-houses, tramways, navvies' huts, and spoil banks, form a strange contrast to this lonely part of "Wild Wales." The course of the river has been diverted to the west side of the narrow end of the valley, and a trench dug across to receive the foundations of the great embankment which is to reach from side to side. The bottom of the trench, upwards of 50 ft. below the surface, exposes compact strata of rock of the Silurian series, known to geologists as the Bala or Caradoc beds, which has been carefully cleared of loose fragments and soft matter, so as to afford a clean surface for the concrete. The embankment, 1,255 ft. in length, will consist of two broad walls of masonry, with the intervening space filled up with cement concrete. The ends of the wall will be built into the slopes on either side, where huge "chases" are being cut to receive them. At the eastern end, in the face of the rock, immediately above what will be the top of the embankment, a granite tablet is inserted, with an inscription recording the date when laid by the Earl of Powis and the names of the principal members and officials of the Liverpool Corporation who were associated with the scheme.

The Earl of Powis is the principal landowner of the district, and of course his lordship's rights, with those of his tenants and other owners, have had to be purchased by the Corporation. The various preliminary surveys, levelling, gauging the volume of the river, &c., prepared the way and gave the inhabitants warning of the great engineering invasion, and, naturally, regrets at the disturbance were modified by the prospect of making something out of it.

A story is told,—which we think has been told before,—of an old Welshwoman who had a small mountain farm not far off, and had usually sold her hay to a dealer at Llanfyllin. Two years ago, as the works were about to be commenced, the dealer drove over to make usual arrangements, but found the good woman unwilling to sell. Desiring to know the reason, she informed him in their own language that she anticipated a ready sale nearer home, as a number of "navvies" were coming to the place.

The outlet for the water is in the eastern corner, where the Hirnant tunnel (two and a quarter miles long) is being driven in the direction of Oswestry. From the tunnel the water will be conveyed for some thirteen miles over rough and uneven country, intersected by numerous valleys, then through two short tunnels connected by syphon-pipes to the Oswestry reservoir and filter-beds. From this spot the pipes will be carried to Malpas, then northwards, and under the Mersey to Prescot reservoir, near Liverpool. The total length of the aqueduct will be 67½ miles.

The height of the embankment will be nearly 100 ft. above the old river-bed, and, after allowing for parapet-walls and roadway, the water-level itself will be more than 80 ft. above the old river. At this level the lake will have an area of upwards of 1,000 acres, at a height of 800 ft. above the sea, and extend 4½ miles northward, covering the village of Llanwyddin, the roads on either side of the valley, a few detached buildings, and Eunant Hall, a respectable mansion at the foot of Allt-yr-Eryr, where the members of the water committee find rest and refreshment after their periodical journeys from Liverpool to inspect the progress of the works.

It will thus be seen that, apart from the actual operations necessary for the water-supply, much has to be done, even in such a sparsely-populated district, to reinstate that which must be destroyed. The old village of Llanwyddin will soon be a thing of the past,—its church, school, chapel, "hotel," and cottages, are to be pulled down, its dead will be disinterred, and new Llanwyddin be built nearly two miles on the mountain side, beyond the reach of the pent-up waters. Eunant Hall, too, and lesser erections, are doomed, and already the new roads are in course of formation.

Near the site of the embankment are the engine-houses, workshops, &c. The engines work the pumps, by which the trench is kept clear of water; also the Siemens generators for supplying the arc-lights, by which the excavation has been continued at night. Saw-benches, lathes, &c., are also in operation. A large shed has been erected for storing the immense consignments of cement that will be required for the walls. A wise provision for the workmen has also been made in the construction of a large "cocoa-room," and near by is a school-church and a mission-hall.

In the Cynynion valley, about a mile away, a quarry has been opened, and stone, easily accessible and of excellent quality, is being procured for the embankment walls. A railroad is laid from the quarry, from which the stone will be conveyed by small locomotives.

All other materials have to be carted from Llanfyllin (pronounced Clan-vut-lin), a terminal station on the Cambrian Railway, about ten miles distant. Costly as the haulage must be, there are good reasons for not making reservoirs places of easy resort or increasing population.

The Earl of Powis will have the privilege of keeping a steam launch on the lake, and another will also be placed there by the corporation. In case the present catchwater area should need supplementing, an increased supply can be obtained by tunnelling through into an adjacent valley.

Most of the work is being carried on by the corporation, under the supervision of their water-engineer, Mr. G. F. Deacon, but the Hirnant tunnel is entrusted to a contractor, and the aqueduct generally will be let by contract in various lengths.

The navvies' huts are on the rising ground at Cynon-isaf, those for the quarrymen being in the Cynynion valley, and other wooden erections, together with some old farm buildings, are occupied by fitters, clerks, foremen, and managers.

As usual, the sudden influx of several hundred men has brought its attendant evils. Crowded together in temporary huts or roughly partitioned-off rooms, the accommodation being insufficient for the number employed, of necessity the requirements of social and sanitary well-being are neglected. The married men and their families make shift in the smallest rooms, almost compelled to take in as many lodgers as can crowd into the rest of the hut. The day and night shifts succeed each other in the same beds, and, as one brawny navvy remarked, with a tone of discontent, "Yer bed's always warm, and Saturday nights, when both shifts are in, there's three on yer in a bed. A feller's got no comfort." Happily there is no grog-shop on the works, to be a constant temptation to the wasteful and easy-going navvies, although the village of Llanwyddin on Saturday night presents a painful scene of inebriation.

When one looks upon the swarm of children and the armies of men at these and many other works, and remembers that such, at one place or another, is their usual existence, it seems imperative that something should be done to

insure provision for more suitable accommodation, such as would be conducive to health, morals, and ordinary comfort; also that the children should be under the ordinary educational laws.

Some four or five years must elapse ere this great undertaking can be so far completed as to begin to be of service, and doubtless the actual finishing will require as many more years. Another generation, and the traveller who gazes upon Lake Vyrnwy will admire a scene that he will scarcely be able to realise is so largely the work of science and the doing of men.

THE NEW COURTS OF JUSTICE AT HAMBURG.

This structure has recently been completed in its internal arrangements, and will form an imposing feature amongst the many improvements which have lately taken place at Hamburg. The building has a south-west aspect, and looks upon a newly-laid out open space. Its length is 375 ft., and its greatest depth in the centre is 143 ft. 6 in. The underground portions are vaulted, and above the ground-floor are two main stories. The ground-floor is devoted to the civil tribunal; the first-floor to the criminal courts; and the second to the public prosecutor's offices, rooms for examinations, &c. A wide flight of steps leads up to the main entrance. This leads to a vestibule, through which a corridor passes which runs from end to end of the building, and thus facilitates communication between its respective portions. The prisoners are brought from the adjoining prison to the underground floor of the building, from which a special staircase leads to the criminal tribunal.

The fitting-up of the interior is simply, but solidly executed, all the doors and window-frames being in oak. The court-rooms are provided with high wainscoting, and with appropriate ornamentation in wood. The windows are of coloured glass. The heating of the entire building is effected by central air heating. There are also arrangements for ventilation, by means of which fresh air is supplied to the rooms as may be required. The gas and water arrangements, as well as the closets, are upon the most approved principles. The façades of the building are executed in yellowish-red brick, together with sandstone, the whole effect being in harmony with the character and objects of the structure. The roof is covered with slates, and the cast-iron lattice-work is effective. The lightning-conductors are upon an approved system.

The building is from the designs of Herr Zimmermann, who has personally supervised, in a general way, the progress of the work. The structure was commenced in May, 1879, so that the time occupied has been nearly three years and a half. The entire cost of the building is 75,000*l*., and the furniture has cost 4,000*l*.

THE NEW BUILDINGS IN NORTHUMBERLAND AVENUE.

The vacant land in Northumberland-avenue is gradually being covered with new buildings, several spacious structures, most of them of a public character, being now in progress. At the south-west corner of the Avenue, extending into Whitehall, and immediately opposite to the Grand Hotel, a large and handsome block, faced with Portland stone and polished Aberdeen granite, has already been carried to a height of four stories. The ground-floor portion of the building contains nine shops, and the upper floors are intended for offices and chambers. Messrs. Francis are the architects of the building, and Messrs. Dove Bros. the contractors.

At the lower end of the Avenue a residential block, upwards of 80 ft. in height, and containing three stories besides the ground-floor, is rapidly approaching completion. The elevation is entirely in Portland stone, richly ornamented and carved. The ground-floor has a massive arched window, occupying the whole of this portion of the frontage, with the exception of pediment entrances at each side. The first and second floors have handsome central three-light oriel windows, and to the third-story windows there are projecting stone balconies. The ground-floor is intended for offices, and the rest of the building will be occupied by Mr. King, the builder, as his private residence. Mr. Groom is the architect of the structure.

Adjoining the last-named building, and opposite to the premises of the Society for Promoting Christian Knowledge, a large area has been secured for the erection of what have been designated the Charing Cross Turkish Baths. They will have a frontage of about 70 ft. to the Avenue, with a similar depth extending northwards to Craven-street. The foundations of the building are at present being got in, and the superstructure will shortly be proceeded with. Mr. Robert Walker, of Warwick-court, St. Martin's-lane, is the architect, and Mr. Woodward, of Finsbury, is the contractor. The baths are being erected for Mr. Neville, who is the proprietor.

The Metropolitan Board of Works are likewise erecting a new fire-brigade station close to the buildings of the Society for Promoting Christian Knowledge. The principal frontage of the station will be at the upper end of Great Scotland-yard, a short distance west of the Avenue. Mr. Vulliamy has designed the buildings, and Mr. Reading, of Buckingham Palace-road, Pimlico, is the contractor.

On that portion of the land at the bottom of the Avenue, near the Thames Embankment, and bounded on the south-east side by Whitehall-place, the "Hôtel Métropole," is about to be erected. It is stated that it will not only be the largest hotel in the metropolis, but in the world. It will have a frontage to the Avenue 320 ft. in length, with a frontage of a similar length to Whitehall-place, and will occupy a ground area of about an acre in extent. The necessary excavations, preparatory to constructing the foundations of the building are now in progress.

Messrs. Perry & Co., of Tredegar Works, Bow, have entered into a contract for the erection of the "Northumberland Avenue Hotel," of which Messrs. Isaacs & Florence, of Verulam-buildings, Gray's Inn, are the architects.

It is said that the recently-erected Avenue Theatre, which, it is understood, will be taken down for the extension of the Charing-cross Station, under the South-Eastern Railway Company's Act of last session, will in all probability be rebuilt on a site adjoining the Grand Hotel.

THE NEW THEATRE OF ARTS, ROUEN.

The quaint old town of Rouen, which though so thoroughly French, is so intimately connected with English history, was, a few days since, dressed out in gala gaiety. The new Théâtre des Arts, which has replaced the theatre burnt down, it will be remembered, some time ago, was opened with no small degree of ceremony by the French Minister of the Interior; and the architect, M. Sauvageot, received, in the *foyer* of his new house, the Cross of the Legion of Honour. This is one of the graceful tributes which are rendered by our neighbours to the artists who have given France her honoured place in the world. It is these rewards for zeal, these incitements to labour, and this acknowledgment of merit which, it will be found, we suspect, give the French artist,—be he architect, painter, sculptor, or musician,—that due sense of his position, social and professional, which can scarcely be said to exist in our country. It is no democratic custom, for we see empires and monarchies alike generous in the distribution of the honours at their disposal amongst those who maintain the artistic dignity of the country to which they belong, and who create those works which will give it a reputation with posterity.

The old Theatre of Arts at Rouen was built in 1776, and was destroyed by the great fire which devastated part of Rouen in 1876. A competition was invited, and many designs were submitted. M. Sauvageot, as City Architect, was not eligible to compete, but he nevertheless prepared a design, which has been carried out, and was opened on Saturday, September 30th, evidently without any of those imputations which in England generally follow, not without apparent reason, such an incident. Pains have been taken to provide a sufficiency of separated staircases and exits, and the stage is cut off from the auditorium by a curtain of plate iron, which is moved with great facility by an hydraulic arrangement.

The new theatre is built on the site of the old one (the area having been enlarged), and is completely isolated. We give a view of the exterior. It covers an area of 1,800 superficial mètres. The stage is a very fine one, and the rooms for the artists are remarkably commodious. The auditorium is elegantly decorated and contains 1,600 places. The separation of the tiers of boxes has been well studied, and a good view of the stage is afforded the spectators generally. The *foyer*, of which we publish a view, is a handsome and well-proportioned apartment, and there is a vestibule beyond. The *foyer* is adorned with pictures from the pencil of M. Baudouin, including Melody, the Lyrical Drama, Heroic Music, and similar subjects. The ceiling of the theatre shows a well-coloured allegorical picture by Glaize.

The theatre was opened with an excellent performance of the "Huguenots," seats being at a high premium.

LUTON COFFEE TAVERN.

This has been erected by the Bedfordshire Coffee Tavern Company, and occupies a site with a double frontage, viz., Cheapside and Barber's-lane, as shown by the plan.

There are two separate bars, divided by a manager's room and dining-room, which has also two entrances. The kitchen is in the basement, with lift to dining-room.

On the first floor is a large billiard-room for two tables, ladies' room, and commercial-room; and on the second floor seven bedrooms for letting. The whole of the building is fitted up in a pleasing and superior style. It was formally opened on October 2nd, by Earl Cowper, K.G., who was accompanied by the Marquis of Tavistock, Mr. Frederick Howard, and other gentlemen. The architect is Mr. Charles Bell, F.R.I.B.A., of Dashwood House, 9, New Broad-street; and the builders are Messrs. Smart Bros., of Luton. The contract was 1,790*l*., and the whole outlay, including land, will be about 2,800*l*.

THE ZOOLOGICAL MUSEUM AT THE "JARDIN DES PLANTES," PARIS.

This striking building is erected at the end of the grand pathway of the garden at the side of the glass houses. In the centre of the façade is placed a large statue in white marble, within a niche of marble of the same colour.

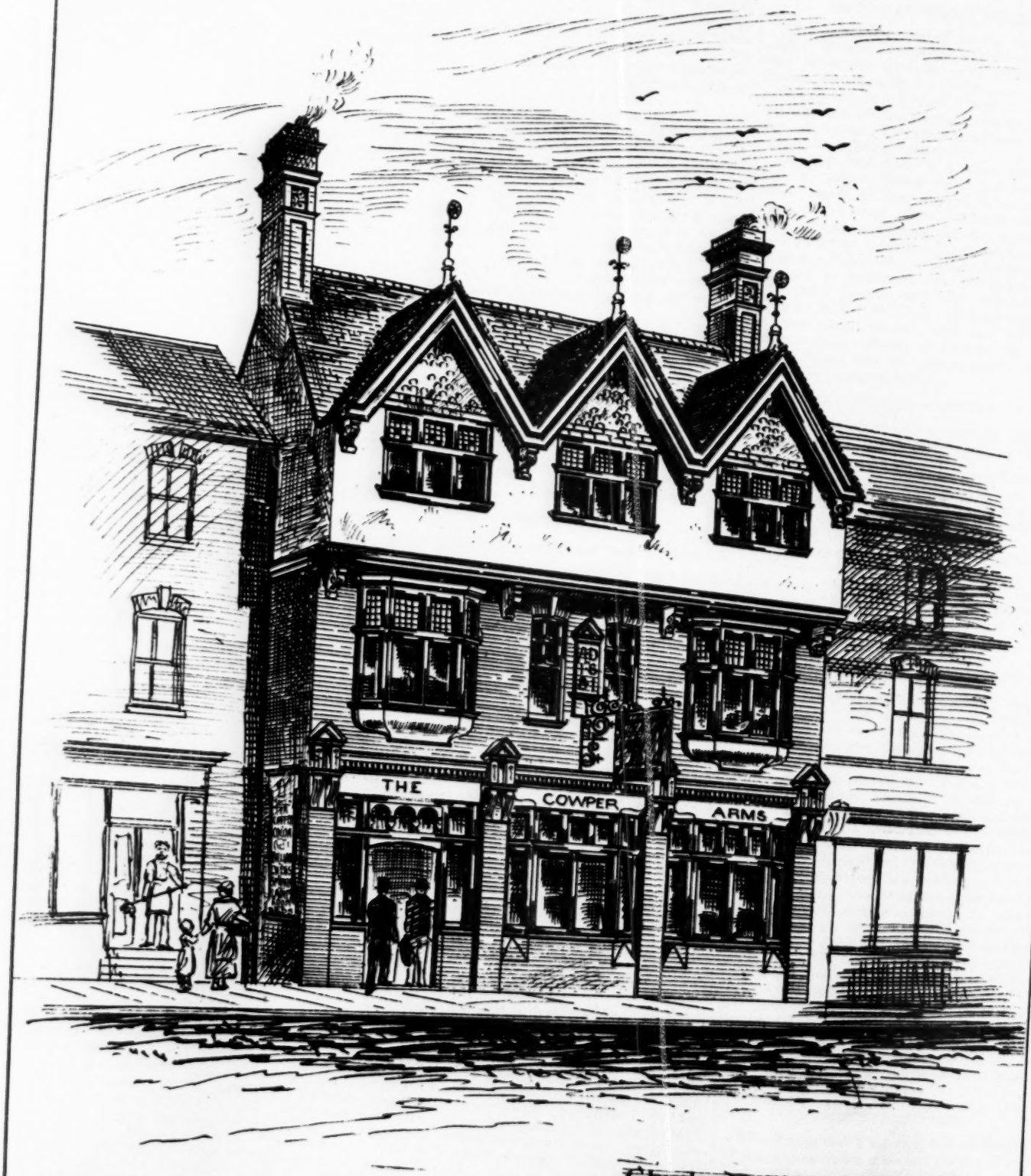
Upon the upper frieze are engraved the names of those *savants* who have contributed by their works to the progress of zoological science,—Vauquelin, Blainville, Tournefort, Bernardin de Saint Pierre, Claude Bernard, and others.

SELWYN COLLEGE, CAMBRIDGE.

The formal opening of Selwyn College has taken place. The college has been founded to commemorate the name and character of the late Bishop Selwyn "as a loyal and distinguished son of the Church of England, as an example of manliness and simplicity of living, and as a great missionary bishop." A sum of about 33,000*l*. has already been contributed for this purpose, and the first block of the college has been erected on a plot of six acres of land at the back of King's and Queen's Colleges. This will accommodate sixty students. The thirty who will come into residence immediately will occupy the end next West-road; the master has apartments on the other side for the present. His lodge will be the next structure taken in hand, and then another block of rooms for sixty more students, as funds come in. When completed, the college will form a quadrangle, with its principal front next Grange-road. The present building, which is in the Tudor style, has been erected by Messrs. Horsman & Co., of Wolverhampton, the architect being Mr. A. W. Blomfield, M.A. The carvings have been executed by Mr. Jas. Frampton.

The Proposed Fish-market at Shadwell. The Act to establish a second London Riverside Fish-market at St. Paul's, Shadwell, has been issued. The former statutes to establish the London Central Fish-market, Farringdon-street, and one near the Elephant and Castle, Newington-causeway, have been noticed. The present and third Act provides for the market and the formation of a new street, and the improvement of existing streets, with "landing-stairs," near the market, which, it is declared, will be of local and public utility. Compulsory power to take property is limited to three years, with provisions as to the displacement of the labouring classes and their accommodation.

Coffee Tavern at LUTON for the Bedfordshire Coffee Tavern Company Limited



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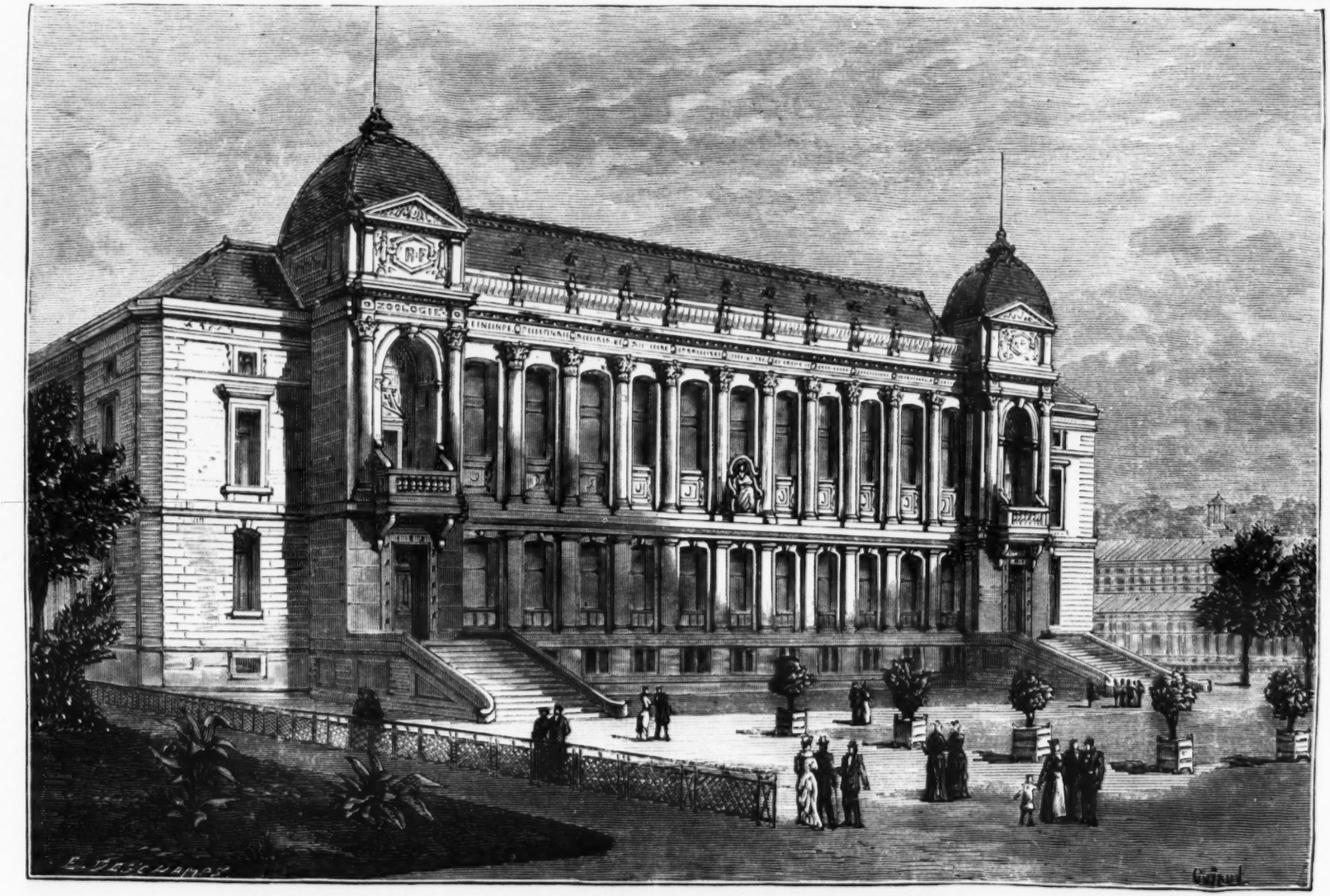
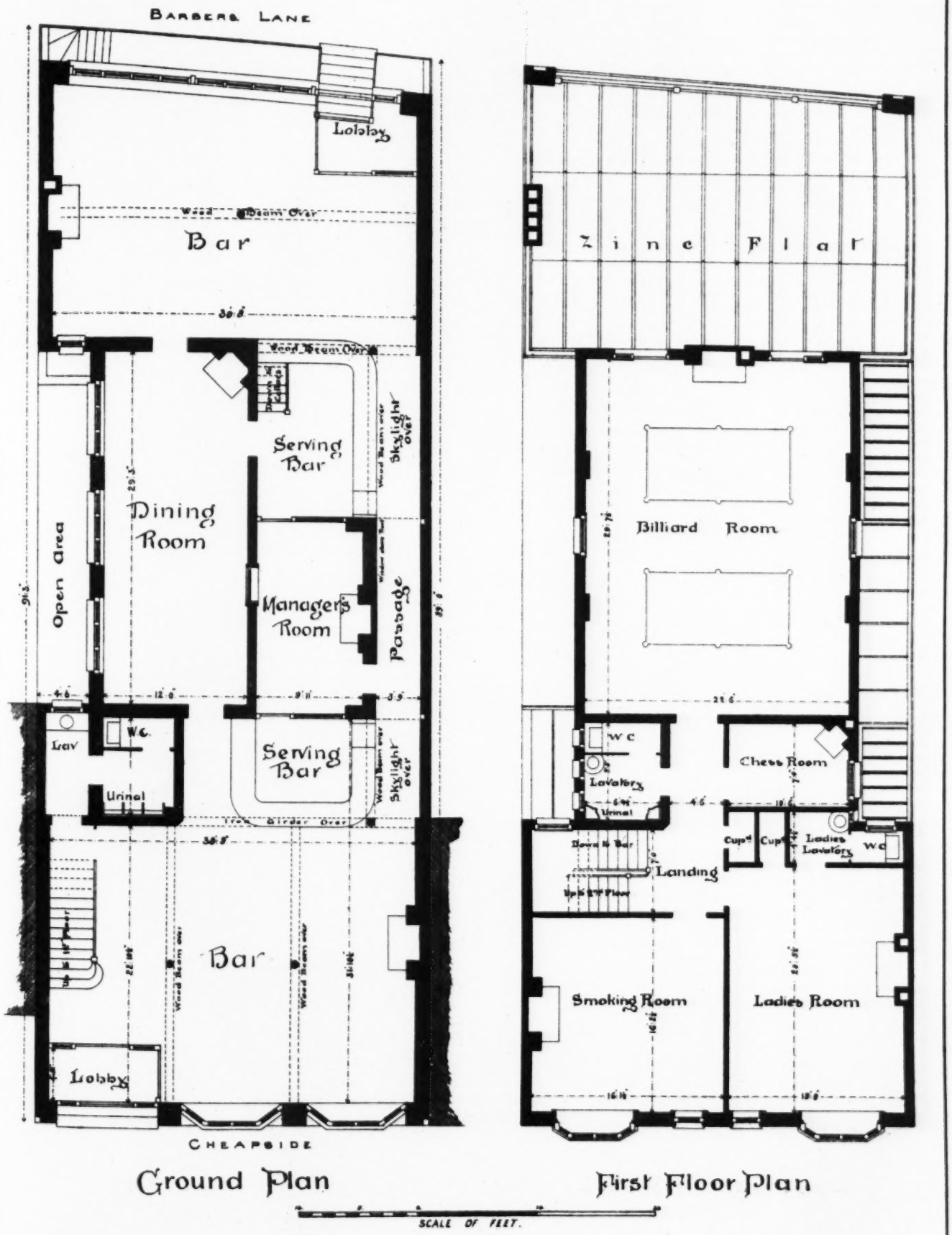
THE NEW THEATRE OF ARTS, ROUEN.——M. L. Sauvageot, Architect.

THE NEW THEATRE OF ARTS, ROUEN: THE FOYER.

THE NEW THEATRE OF ARTS, ROUEN: THE FOYER.



THE NEW ZOOLOGICAL MUSEUM AT THE GARDEN OF PLANTS, PARIS.



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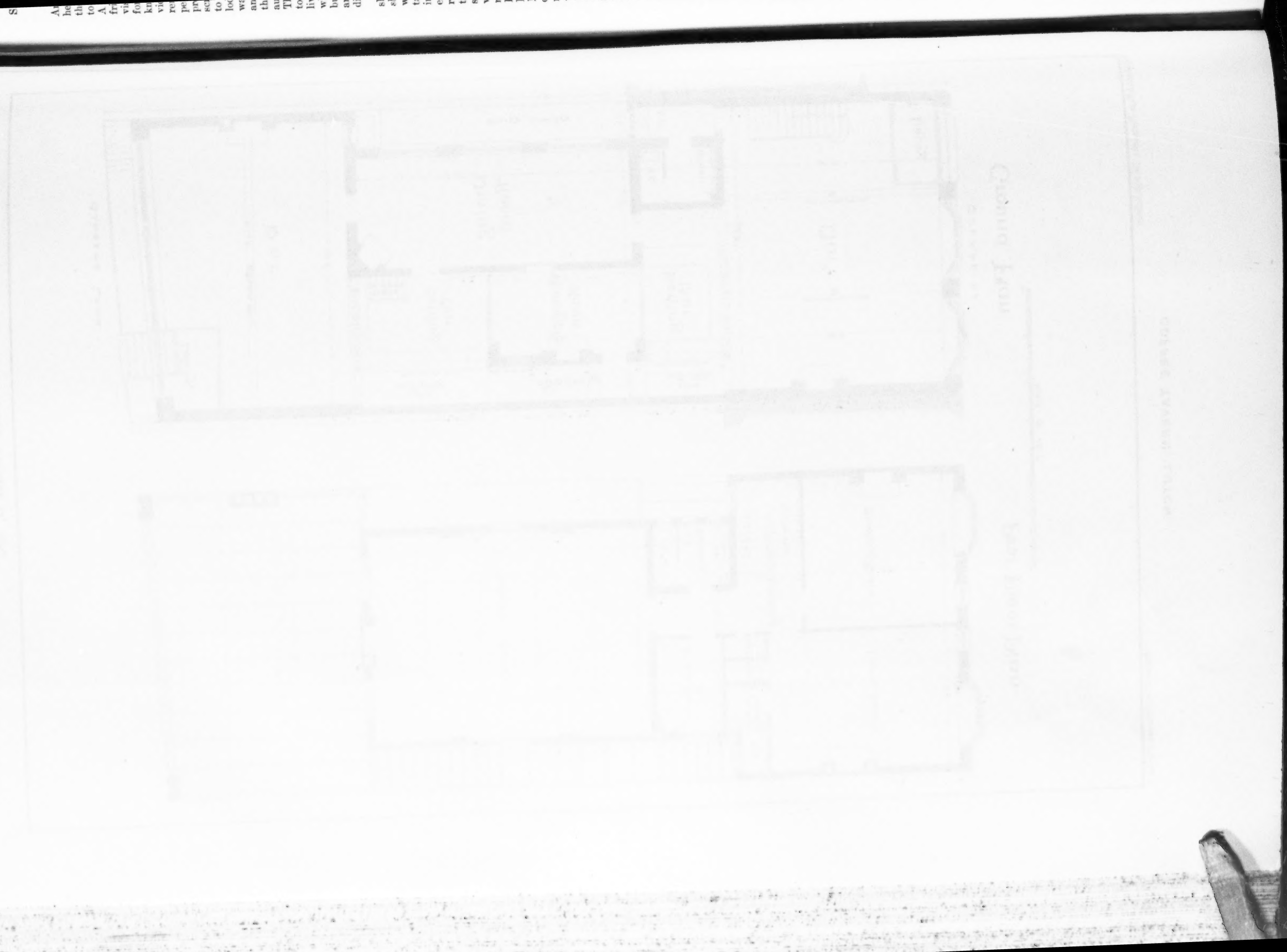
COFFEE TAVERN, LUTON.



SANDRIDGE AND WHEATHAMPSTEAD, HERTS.

The general meeting of the St. Alban's Architectural and Archæological Society was held on Coleman's Green,—an open space by the side of the road which leads from Sandridge to the valley of the Lea, and thence to Welwyn. A goodly number of the members and their friends had assembled, having in prospect some visits to pleasant places thereabouts. The formal business was gone through on the green knolls, and thereafter the Rev. Dr. Griffith, the vicar of Sandridge, called attention to the only remaining portion of an old cottage, the property of Earl Cowper,—an ivy-covered chimney, propped by a brick buttress, bearing this inscription:—"John Bunyan is said by tradition to have preached and occasionally to have lodged in the cottage of which this chimney was a part." The Vanity Fair of Bunyan, and other allusions in his works, Dr. Griffith thought, brought St. Alban's to mind,—the author must have had that town in memory. The tradition with reference to Bunyan's visits to Coleman's Green comes through persons now living, who have talked with Robert Coleman, who seems to have lived in the old cottage, was buried at Wheathampstead in 1844, aged 93, and consequently was born in 1751. Bunyan died in 1688.

The ancient moat and slad were next visited, slad being a deep cutting between trees (A.S., *slæd*). This deep cutting, part still filled with water, is easily followed for a considerable distance. When connected with the parallel dyke in the west of it, a space of about 180 acres was enclosed. Dr. Griffith considered this a camp of refuge, at least as old as the Saxon times, for the old parishes of Sandridge and Wheathampstead, which existed as such in Saxon times, were divided by the dyke. Long before that it may have been in existence, and used by the Britons in the tribal wars which were so frequent. It was also probably used at the time of the Danish invasions. It shows marks of Saxon occupation; the fields in the vicinity have Saxon names. Lower Beech Hyde was passed on the way to the parallel dyke, called the Devil's Dyke locally and in the Ordnance Survey, &c. Dr. Griffith explained that the word "Beech," in Upper and Lower Beech Hyde Farms, had a very different meaning from the name of "The Beech Farm" in the adjoining parish. They were probably named from the slad, for the word "Beech" was formerly used not only for the sea-shore, but for any bank. The Devil's Dyke is an artificial valley of considerable depth, width, and length, the earth taken from the cutting being placed at the sides and increasing the depth. It was nearly north and south, and divides the parishes of Sandridge and Wheathampstead, the Hundreds of Cassio and Dacorum, and the two divisions of the county of Hertford.

The next point visited was Marford Bridge, near which once stood a wooden cross with an alabaster image of St. Mary. Standing on the wooden footbridge,—across the River Lea, about half a mile to the east of Wheathampstead,—Mr. R. R. Lloyd, the honorary secretary of the society, said:—"The earliest mention of Marford in the Chronicles of St. Alban's Abbey, occurs during the Abbacy of Robert de Gorham (1151-66), when some land is described as lying 'between the stream of Marford and the land of Sandrugge' (*Gesta Abbatum*, i. 134). It is again referred to in the years 1424-5, in the following passage:—'In the third year of the reign of King Henry VI. (1424-5), William Marforde, a tenant of the Abbot of St. Alban's, in the parish of Sandrygg, having through old age been deprived of his eyesight, caused a wooden cross to be erected on this side of Marforde Brigg, near the highway, on the right-hand side going towards Codicotte; this cross, with an image of St. Mary in alabaster, stands on the land of the lordship of Sandrugg' (*J. de Amundesham Annales*, i. 6). The two fields nearest to the ford on the south-east are named respectively 'Marvel [probably a corruption of "Marford"] Meadow,' and 'Crosspath Field.' Marford, which is a hamlet of Wheathampstead, possesses a name whose first syllable is a puzzle to antiquaries. Mr. J. E. Cussans, in his admirable 'History of Hertfordshire,' gives it as his opinion that it stands for *mere*, the whole word meaning the 'ford of the *mere*.' 'The whole valley,' he writes, 'was one vast lake or mere, hence the name of the manor Lamer, or Lee-mere. At certain places this mere was fordable, as at Batford, Pickford, and Mereford, now called Marford. At its narrowest part, between the comparatively high ground on which the railway station now stands on the north, and the church on the south, it was spanned by a bridge, over which passed, and still passes, the road from St. Alban's to the North' (Part xiv., p. 326). Others have thought that Marford is a corruption of Mary's Ford, and that it takes its name from the image of St. Mary which formerly stood hard by. This, however, seems unlikely, since the name Marford was in use, as I have shown, nearly 300 years anterior to the erection of the image of St. Mary, the account of which, nevertheless, does not absolutely negative the possibility of a statue having been set up here in honour of the saint at a much earlier period. A third solution, which is offered with some diffidence, is that *Mar* is a contracted form of the Anglo-Saxon *Mearc*, a boundary. Upon this theory, Marford would mean 'the ford at the boundary,' a term singularly appropriate, when we consider that the boundaries of the Hundreds of Cashio and Dacorum, as well as those of the parishes of Wheathampstead, Sandridge, and Ayott St. Lawrence, all meet at this spot. Marbury in Cheshire, and Marbrook in Shropshire, both of which stand on the frontier lines of the Anglo-Saxon kingdom of Mercia, are examples of the use of this word, which is found in its uncontracted form in Markyate-street." It may here be mentioned, by the way, that Mr. Cussans is seeking 500 subscribers for the fourth volume of his "History of Hertfordshire," the work to which he has already devoted thirteen years of incessant labour. The proposed volume will deal with St. Alban's, Roman and Mediæval; and contain many illustrations. The three volumes already published have entailed on Mr. Cussans a loss of about 3,000*l*.

The party then drove to Ayot St. Lawrence, and the Rev. Canon Davys, rector of Wheathampstead, gave a short history of the church, now a ruin, but clothed in foliage, and preserved with care and pride. The name of the place, he said, signified an "eyott," or island, as it were, of high ground, between the valleys of the Lea and Mimram. The two parishes of Ayot St. Lawrence and Ayot St. Peter seem to have been one at the time of the Conquest, though divided some time subsequently. Domesday Book speaks of one Geoffrey [de Magnaville] holding "Aicte" of the Abbot of Westminster, perhaps one of those manors which, like the neighbouring one of Wheathampstead, King Edward the Confessor granted to the Abbot of Westminster. This manor appears to have passed out of the hands of the Abbot and Convent of Westminster some time after the Domesday survey, as we find one William de Ayett holding it under the Abbots of St. Alban's in the reign of Edward I. This William de Ayett married Lettice, daughter of Sir Robert de Keynes of Dodford, in the county of Northampton, and in 1305 we find that she presented to this rectory as the widow of William. Their son was Lawrence de Ayett, who succeeded, and died in 1350. The arch leading into the northern chancel would appear to be of the period of Edward I., or the time of William de Ayett, while the latter work would bring us down to 1350, the time of Lawrence de Ayett's decease. This family held under the Abbots of St. Alban's, and those abbots were great builders. What more likely than that architects or masons from St. Alban's might have been sent to this church? The beautiful east window of the manor chancel corresponds in some details with work in Hugh de Eversden's lovely Lady Chapel at St. Alban's, and he was Abbot of St. Alban's from 1308 to 1326, when Lettice, the widow of William de Ayett, having presented to the rectory in 1305, was probably living in the Manor-house, and might be employing and solacing the days of her widowhood with church building. The names of Abbots Wallingford, Mentmore, and Thomas de la Mare bring us down to 1350, when Lawrence de Ayett died, so that we may well believe that these proprietors provided the means for the beautiful work we see, and that they sent to St. Alban's for architectural advice and assistance. The Decorated church received alterations and additions during the Perpendicular period. At this time Sir Thomas Barr was lord of the manor,—the monument within the tower is believed to be that of Sir Thomas Barr, who died at Christmas in the year 1421, and his wife. That family remained in possession of the manor for some years, and we may well suppose that the Perpendicular additions were made at that time. These additions consist of the tower, inserted windows, and a doorway. The church was about to be entirely pulled down by the Lord of the Manor, Sir Lionel Hyde, when he built the new Grecian church in 1778, but the work of demolition was prohibited by the Bishop of Lincoln, in whose diocese the parish was then included.

Crossing the Lea, and driving through the charming Lamer Park, the house was reached, and the party kindly received by Mrs. Drake-Garrard. In the hall stands a wardrobe left by Queen Elizabeth when she visited Lamer, a very fine piece of inlaid work. Charles I., accompanied by his chaplain (Hudson) and his faithful friend, John Ashburnham, stayed at Lamer on April 20th, 1646, when hurrying from Oxford to join the Scottish army. As a memento of his visit Charles left behind him two portraits, those of himself and his wife. A drawing of the house as it appeared at the time of the royal visit was shown, and the position of his apartments, and the precautions taken to secure his escape in case of danger, were pointed out. At Wheathampstead House, the residence of Lord Kilcoursie, a portrait of John Bunyan, by Sadler, was inspected, which was discovered by the late Rev. John Olive in the possession of a cottager at Codicote. The Church of St. Helen, Wheathampstead, was then visited.

At No-Man's-Land,—the large commor, nearly a mile in length, through which the road from Wheathampstead to Sandridge and St. Alban's passes, the Rev. Dr. Griffith gave an account of the dispute between the men of Wheathampstead and the men of Sandridge as to common rights upon the manors of Westminster and St. Alban's. He said:—The question of the rights of Sandridge and Wheathampstead over No-Man's-Land used to be much disputed both by the parishioners and their lords, the Abbots of St. Alban's and Westminster. The re-erection of gallows there by Richard Wyth, bailiff of the Abbot of Westminster, was soon followed by their destruction one night with axes and swords. This occurred in 1427, during John of Wheathampstead's abbacy. No one knew who did the deed, but the blame was laid on William Waugh, the terror of religious houses and peaceful farmers. Wyth again renewed them. Abbot John, trusting to sound advice about his rights, caused them to be levelled to the ground by the hands of his officers and tenants of Sandridge, in broad daylight, one Saturday. Parish bounds used to be beaten on the Rogation days with religious and other ceremonies. Accordingly, on the next Rogation Monday, the holiday of the great apostle to the Saxons, St. Augustine, quite early in the morning, the men of Wheathampstead finished their perambulations, and then stealthily went out of their way in fear of their very skins, as the chronicler puts it, and planted a slight wooden cross on the site of the gallows. Abbot John, after due consideration, directed the Sandridge bounds to be beaten on Wednesday, after ascertaining that no force of Wheathampstead was prepared for violence. Accordingly, the vicar and men of Sandridge, in due form, singing the Psalms and reciting the Gospels, beat their bounds, asserting their ancient rights thus handed down from time immemorial, and went back uninjured to their several homes. The next year, 1428, a shepherd from Wheathampstead-bury died suddenly on No-Man's-Land while feeding his sheep (perhaps from sun stroke; it was in July). The vicar of Sandridge claimed the body for burial in Sandridge churchyard, but the men of Wheathampstead carried it off into their church, and, without a coroner's inquest it was buried in the churchyard there. In 1429, St. Cutlac's Day, the Bishop of Lincoln, under the authority of the Pope and the English Parliament, came to St. Alban's to hold an inquisition concerning heresy. Wicliffism and Lollardism were giving trouble. The Abbot, ever jealous of his rights of exemption, opened St. Peter's Church,—not the Abbey,—to the bishop. On the same day a baron of the Exchequer, John Fray, accompanied by the clerk to the cellarar, made the round No-Man's-Land to examine into the question. The next day, the bishop's inquisition being over, monks, tenants, and bailiffs of the two Abbeys and Abbot John himself and the Baron met on the ground, and there on one side the documents belonging to Westminster were read, and on the other the evidence of an extremely old Sandridge man, John Adam, was given that,

while the right of pasture was common to both parishes, the actual soil was of the lordship of Sandridge. Whether the boundary stones now existing were then laid down is more than doubtful, for ten or eleven years later we find suits dragging through the courts and hints of further putting up and pulling down of gallows, but it was at last settled by a jury of twelve men from the neighbourhood, that Robert Belamy, farmer and yeoman, and Matthew Bepsette, gentleman and sergeant of the Abbey of St. Alban's, did no wrong when, on November 24th, 1437, they again pulled down the disputed gallows and carted away the materials.

THE METROPOLITAN BOARD OF WORKS AND THE LONDON THEATRES.

Sir Henry Arthur Hunt, the arbitrator appointed by the Home Secretary, has made his award with regard to Drury-lane Theatre, in respect of which building the Metropolitan Board of Works made certain requisitions to the renters under the Metropolis Management and Building Act Amendment Act of 1878. The points in dispute between the parties were confined to the construction of a new proscenium wall to divide the stage from the audience part of the house, and the provision of a second staircase to the sixpenny gallery, the other requisitions having been practically agreed to by the renters on the advice of Mr. C. J. Phipps. Sir Henry Hunt, by his award, has confirmed the Board's requirement as to the proscenium wall, as well as to the second staircase to the sixpenny gallery; but as regards this latter addition he directs that a staircase to be used in the case of emergency shall be constructed from the sixpenny gallery to the staircase now existing leading from the shilling gallery into Russell-street, instead of continuing the Duke of Bedford's private staircase to the level of the sixpenny gallery as suggested by the Board. The award further provides that each party shall bear their own costs as regards the arbitration, and that the Board shall pay the costs of the award.

PROPOSED NEW WORKHOUSES FOR THE METROPOLIS.

The Local Government Board is rousing the ire of some of the inhabitants and Guardians of the Poor of certain districts of the metropolis by its insistance on the provision of adequate and healthy buildings for poor-law administration. Without committing ourselves to the expression of an opinion yea or nay in favour of all the requirements of the central authority, we are bound to say that of our own knowledge there is good ground for action with regard to at least one of the old workhouses in question. Re-building or enlargement, or removal to other sites, may, and no doubt will, involve increased demands on the pockets of the ratepayers, if only for a time; but, notwithstanding, the necessary accommodation must be provided, so as to avoid overcrowding and other insanitary conditions, with their inevitably attendant and costly evils.

At the meeting of the Guardians of the St. Olave's (Southwark) Union on the 5th inst., a letter was read by the clerk (Mr. J. G. Hawkins), which had been received from the Local Government Board, notifying that, in their opinion, nothing short of the acquisition of the whole of the tan-yard and buildings adjoining the Bermondsey Workhouse would enable the Guardians satisfactorily to carry out their scheme for the concentration of the indoor poor of the union. Mr. Bisley, one of the guardians, observed that that meant an expenditure of 200,000*l*. He heard that quite 45,000*l*. had been asked for the land. Ultimately the letter was referred to a committee.

On the same day a special meeting of the Clerkenwell Vestry was held, to take into consideration a letter lately received by the Holborn Union Guardian Board from the Local Government Board, urging upon them, in the interest of the ratepayers, to expend from 100,000*l*. to 200,000*l*. "in building large palaces for additional paupers," * &c. Mr. Leaver moved a resolution, "That in the opinion of the Vestry the building of a new workhouse at Upton, as proposed by the Local Government Board, for the accommodation of from 1,200 to 1,500 inmates, at an expense of upwards of 100,000*l*., and the closing of the Gray's-Inn-road workhouse, is quite unnecessary, entailing, as it inevitably will, a large additional burden for many years upon our already over-taxed ratepayers, and a great increase in the cost of efficient management of the several scattered institutions of the Board of Guardians." Mr. Brighty moved, as a rider to the above, "That a conference of the vestry with that of St. Luke's and the Holborn Board of Works be held to consider the subject." Mr. Ross opposed the motion in a speech of upwards of an hour and a half, after which the vestry adjourned the further consideration of the subject for a fortnight.

The Guardians of the Wandsworth and Clapham Union, at their meeting on the same day, had under consideration a letter from the Local Government Board, dated the 18th ult., sanctioning the purchase by the Guardians of a site in Allfarthing-lane for 10,000*l*., for the erection of a new workhouse. Mr. Barr asked if it was absolutely necessary to conclude the purchase of the site. The Clerk (Mr. Sanders) said it was. Mr. Barr said that, notwithstanding that, he should move that the new plans prepared for enlarging the existing buildings on St. John's Hill be sent to the Local Government Board for their approval. One plan he (Mr. Barr) had caused to be prepared, for constructing a ward over the stone-yard, showed that they could utilise the present premises, and provide beds for 450 extra patients in the infirmary, at a cost of 21,500*l*., and yet conform to the Local Government Board regulations as to the superficial area to be allowed for each patient. By another plan he produced, for erecting buildings in front of the present workhouse, beds for 520 more inmates in the infirmary, and 160 in the workhouse, could be provided at a cost of 26,598*l*. Dr. Longstaff spoke in support of the purchase of the ground proposed to be bought, and said that neither of Mr. Barr's plans would have the slightest chance of being approved by the Local Government Board. After further discussion the matter was again adjourned.

* We quote from one of the newspaper reports, but we do not suppose that these expressions were used in the letter referred to.

BIRKENHEAD NEW TOWN-HALL COMPETITION.

The following is the order of merit of the five designs selected by Mr. C. Barry, and the names of their respective authors, viz.:—

1st. "Mersey."—C. O. Ellison, 62, Dale-street, Liverpool.

2nd. "St. Werburgh."—Henry Hall, 19, Doughty-street, Mecklenburgh-square, London; and John H. Eastwood, 16, Red Lion-square, London.

3rd. "Fide."—E. P. Wright, 26, Well-street, Plymouth; and G. B. Rawcliffe, 8, Ormerod-street, Burnley.

4th. "Thorough."—John Sulman, 1, Furnival's Inn, Holborn, London, E.C.

5th. "Fortunio."—W. Tyson Gooch, 29, Guilford-street, London, W.C.

The Council, Mr. Alfred Gill, town clerk, informs us, have selected the design "Mersey," in accordance with the recommendation of the referee.

The following resolution was passed unanimously by the Council:—

"That the cordial thanks of the Council be given to those gentlemen who, accepting the invitation of the Corporation, have submitted designs for the proposed new town-hall; and the Council desire to record their appreciation of the hearty manner in which the profession responded to their invitation, as shown by the number and general excellence of the drawings."

A considerable objection is felt to the site originally fixed on for the new building, a small piece of land projecting from one side of Hamilton-square, and it is urged, we think with very good reason, that the proper place for it is the centre of Hamilton-square itself, if the necessary arrangements for effecting this can be made within any reasonable time. The Council, at their meeting on the 6th, came to a resolution empowering them to reconsider the question of site.

Conservation of Old Buildings.—At the recent Congress of the Social Science Association in Nottingham, Mr. Samuel Huggins read a paper in which he contended, in answer to the question, "What are the proper limits of conservatism in regard to ancient buildings?" that it has no limits.

NEW PUBLIC MORTUARY IN CHELSEA.

At the meeting of the Chelsea Vestry last week, it was reported that the new building erected by that body in the old burial-ground in King's-road was completed, and already in use. The walls are lined with cream-coloured glazed bricks, which can be readily cleansed, and the slabs are marble or slate, according to the various requirements. The roof is high-pitched and open; the windows are partially filled with coloured glass; and the water and gas supply, ventilation, drainage, and other matters are provided for. There are three separate rooms; the larger one has three slabs, which are provided for the reception of accidental and other deaths; another room is fitted up with conveniences for making *post-mortem* examinations, and contains a large galvanised iron air-tight coffin, with a partially glazed lid. This is intended for very bad cases, and the remains could be viewed by a coroner's jury without unpleasantness being experienced. A third room is partitioned off from the lobby, and is provided for the reception of coffins generally, and it is hoped that the poor of the district (especially where there is overcrowding) will avail themselves of this free accommodation as a temporary resting-place for their dead. The building was erected from designs prepared by Mr. George H. Stayton, C.E., the surveyor to the vestry, and has cost over 1,000*l*.

BIRMINGHAM.

At a meeting of the Birmingham Town Council on Tuesday last week, the Mayor brought forward the applications about to be made for the privilege of lighting the town by electricity by various companies, and also the offer to supply the electricity for lighting the town-hall, made by the Messrs. Winfield. As regards the latter the Mayor stated that he had caused a statement to be prepared of the average cost of twenty evenings' lighting by gas, which amounted to 2*l*. 18s. 3d., including attendance, whereas the cost of electric lighting on the basis of Messrs. Winfield's charges would, including attendance, amount to 12*l*. 10s. per evening as near as could be calculated. The whole question was relegated to the Estates Committee for their consideration and report.* E. G.

DICKENS'S EXPERIENCES OF WORKMEN.†

"I am perpetually wandering (in fancy) up and down the house and tumbling over the workmen. When I feel that they have gone to dinner I become low; when I look forward to their total abstinence on Sunday I am wretched. I dream also of the workmen every night; they make faces at me, and won't do anything."

"I thought we were going backward at a most triumphant pace, but yesterday we rather recovered. The painters still mislaid their brushes every five minutes, and chiefly whistled in the intervals, and the carpenters continued to look sideways with one eye down pieces of wood, as if they were absorbed in the contemplation of the perspective of the Thames Tunnel, and had entirely relinquished the vanities of this transitory world." ‡

"Foreman sweet-tempered, but uneasy. Several reams of blank papers constantly spread on the drawing-room walls and sliced off again, which looks like insanity."

"Two men still clinking at the new stair-rails. I think they must be learning a tune. I cannot make out any other object in their proceedings."

"Since writing the above I have been up there again, and found the young paper-hanger putting on his slippers and looking hard at the walls of the servant's room at the top of the house, as if he meant to paper it one of these days. May Heaven prosper his intentions!"

"As to the carpenters, they are absolutely maddening; they are always at work, yet never seem to do anything."

"Joiners are never out of the house, and the carpenters appear to be unsettled (or settled) for life."

"I clearly see that the workmen yet linger-

* In the report of Dawson's Memorial, instead of "canopy cast in bronze," read "statue cast in bronze."

† Herewith I forward certain extracts which I have taken (after a careful reading) from the published letters of the late Charles Dickens.—F. B.

‡ Written to H. Austin, October, 1851.

ing in the yard must be squeezed out by bodily pressure, or they will never go."

"Three paving blouses came to work at the corner of this street last Monday, pulled up a bit of road, sat down to look at it, and fell asleep. On Tuesday one of the blouses spat on his hands, and seemed to be going to begin, but didn't. The other two have shown no sign of life whatever. This morning the industrious one ate a loaf. You may rely upon this as the latest news from the French capital."*

BUILDING PATENT RECORD.†

APPLICATIONS FOR LETTERS PATENT.

4,524. J. S. Willway, Bristol. Gas and oil cooking and heating stoves, &c. Sept. 22, 1882.

4,550. J. Shaw & F. Milan, Lockwood. Apparatus for indicating the presence or absence of water in cisterns, &c. Sept. 25, 1882.

4,592. H. Blair, Glasgow. Ventilating appliances for soil-pipes, &c. Sept. 27, 1882.

4,600. W. R. Lake, London. Devices for the suspension of pictures, &c. (Com. by H. R. Heyl, Philadelphia, U.S.A.) Sept. 27, 1882.

4,618. E. Whillier, London. Firegrates or stoves. Sept. 28, 1882.

4,647. R. C. Thompson, Sunderland. Fasteners for window-sashes, &c. Sept. 29, 1882.

4,652. T. Young and G. C. Wood, Sheffield. Appliances for securing windows and doors. Sept. 30, 1882.

4,655. R. Hudson, Gildersome. Construction of metallic staircases. Sept. 30, 1882.

4,679. J. D. Lampard and F. Coppen, London. Hack-cap for protection of bricks from rain. Oct. 2, 1882.

4,700. S. Sturm, Cologne. Apparatus for use in connexion with stoves, fireplaces, &c., for economising fuel. Oct. 3, 1882.

4,715. J. Bateman, London. Stoves and fireplaces. Oct. 4, 1882.

4,726. W. A. Barlow, London. Door lock or latch checks. (Com. by F. W. Boldt and P. C. A. Vogel, Hamburg.) Oct 4, 1882.

4,727. W. A. Barlow, London. Trapping sewers and drains. (Com. by L. Henry, Brussels.) Oct. 4, 1882.

4,731. J. Drewitt, London. Connecting spindles to locks and latches, &c. Oct. 4, 1882.

4,739. A. Gandebeen, Brussels. Ventilators. Oct. 5, 1882.

4,743. H. Hancock, London. Fastenings for doors and window-sashes. Oct. 5, 1882.

NOTICES TO PROCEED

have been given by the following applicants on the dates named :—

Sept. 26, 1882.

2,395. H. Greenhous, Worcester. Fireplaces. May 22, 1882.

2,477. J. Smith, Liverpool. Domestic fireplaces. May 25, 1882.

2,530. H. Ransford, Brighton. Domestic stoves or fireplaces. May 27, 1882.

3,340. A. Drummond, Edinburgh. Appliances for securing glass to astragals and sash-bars. July 14, 1882.

Sept. 29, 1882.

3,832. L. Dove, London. Self-acting steam traps, &c. Aug. 11, 1882.

Oct. 3, 1882.

2,590. T. H. P. Dennis, Chelmsford. System of glazing, &c. May 1, 1882.

Oct. 6, 1882.

3,928. C. A. Jones, Gloucester. Steps or ladders. Aug. 16, 1882.

ABRIDGMENTS OF SPECIFICATIONS

Published during the Week ending Sept. 30, 1882.

537. B. Verity, London. Burners for gas fires. Feb. 3, 1882. Price 6d.

These are made of fire-clay and silicate, and have two horizontal chambers, in the lower one of which the gas and air are mixed and heated. This lower chamber communicates with the upper one at both ends, and in the perforation of this upper chamber the gas is burnt.

746. T. F. Wintour, London. Ventilating apparatus. Feb. 16, 1882. Price 6d.

These ventilators are made in a conical form, of perforated metal or wire gauze, and placed in the window or chimney-shaft, &c. The amount of air allowed to pass through is regulated by a disc of metal or mica placed inside the cone.

847. W. Meakin, London. Sash-pulley. Feb. 21, 1882. Price 4d.

The frame is cast solid, and in each of the sides is a slot, in which the axis of the pulley revolves. The pulley and its axis are also cast in one piece.

850. J. Everard, Birmingham. Raising and lowering blinds. Feb. 21, 1882. Price 6d.

A lever is eccentrically suspended below the pulleys of the blind cords, and a horizontal slot is formed in the frame opposite the lever. The cords pass between the lever and the frame. When it is desired to hold the cords, the lever is pulled so as to join the cords in the slot; and when the cords are pulled, the lever falls down, and the cords are free.

875. J. Slater and R. Pollock, Edinburgh. Shoring or supporting buildings in course of alteration. Feb. 23, 1882. Price 2d.

Instead of using horizontal wooden beams, &c., a series of iron boxes are inserted at intervals into the wall, which project outside the same. These outer ends are supported by dumb screws. The masonry can then be removed, and the new beams inserted. (*Pro. Pro.*)

888. H. Sutcliffe, Halifax. Manufacture of apparatus connected with water-closets, &c. Feb. 23, 1882. Price 8d.

These are all made in two halves, and cast in permanent moulds or patterns, and then are joined together by bolts passing through lugs cast thereon.

893. A. Jamieson, Blantyre. Apparatus for mixing concrete. Feb. 24, 1882. Price 6d.

The materials are passed through a revolving horizontal cylinder, in which is a shaft with helical or screw blades, which revolve in the opposite direction.

895. C. Hibbs, Plaistow. Decorative coverings for walls, ceilings, &c. Feb. 24, 1882. Price 2d.

These consist of pieces of glass of various shapes, accurately fixed together, and coloured as required. They are secured on the wall, &c., by a fine cement. (*Pro. Pro.*)

925. W. H. Lascelles, London. Earth-closets. Feb. 25, 1882. Price 6d.

A rotary receptacle is provided for the soil. Each compartment of this receptacle as it revolves is filled with earth, and, after using, is again revolved, when the earth and soil fall into a suitable pit, the earth being uppermost.

934. J. Carpenter, Southampton. Apparatus for opening, closing, supporting, and locking window-sash frames, &c. Feb. 25, 1882. Price 2d.

The sash has a rack, with ratchet teeth on its side, and bolts pass through a plate on the frame, and engage these teeth. These bolts are pressed out by springs, and held back by cords and levers. (*Pro. Pro.*)

861. H. J. Haddan, London. Closet valves. (Com. by W. Rudiger, Berlin.) Feb. 22, 1882. Price 2d.

To prevent the valve closing suddenly, a piston is mounted on the valve spindle, which is movable in a cylinder to which water is admitted, and only allowed to flow out slowly. (*Pro. Pro.*)

Published during the week ending October 7, 1882.

911. J. Parker, Kilmarnock. Manufacture of bricks and tiles. Feb. 25, 1882. Price 6d.

The bricks, after drying, but before firing, are passed through an apparatus and dressed so as to remove any excess of material or inequalities.

914. S. S. Hellyer, London. Water-closets, urinals, &c. Feb. 25, 1882. Price 6d.

The overflow trap of a valve closet is connected with the vent-pipe of the valve box above the level of the valve. The inlet pipe of the basin is connected with the overflow pipe thereof by a passage moulded in the basin. The syphon trap of a urinal basin is made in one piece with the back of the basin.

918. H. J. Haddan, London. Ventilators. (Com. by P. Mihan, Massachusetts, U.S.A.) Feb. 25, 1882. Price 6d.

These have a mouth on one side of the hood, and the entrance or exit of the air by or from this mouth is governed by two hinged deflectors.

950. W. P. Borwick, London. Window and other fastenings. Feb. 27, 1882. Price 6d.

A short vertical bar is placed in the end of the lever arm of the fastener, which drops down in a slot or beyond the plate of the lower sash when the fastener is closed, and locks the same.

956. C. D. Abel, London. Ventilating apparatus. (Com. by E. Oehlmann, Berlin.) Feb. 27, 1882. Price 6d.

A turbine carries on its shaft helical blades or vanes, by the rotation of which the air is propelled as required. Two jets of water are used to turn the turbine in the different directions required.

967. F. Wirth, Frankfort. Stoves for warming rooms, &c. (Com. by E. Schoneberg, Brockenheim, Germany.) Feb. 28, 1882. Price 2d.

These consist of a pedestal within which is the fire receptacle surrounded by a fire-brick ring with circular holes, through which the gases escape and are consumed by the heated air inside the pedestal. (*Pro. Pro.*)

980. T. le Poidevin, Guernsey. Machinery for moulding bricks, &c. Feb. 28, 1882. Price 6d.

The pug-mill has discharge orifices in the bottom, and the moulds pass in succession under the pug-mill and receive the clay therefrom. In these moulds the bricks are pressed.

999. G. Wilson, New Cross. Apparatus for fastening scaffold-poles, &c. March 2, 1882. Price 2d.

Two jaws are hinged together, and inserted under the lashings of the scaffolding and a wedge-shaped piece is driven in between the two jaws. (*Pro. Pro.*)

2,794. C. Hulseberg, London. Boilers for heating buildings, &c. June 14, 1882. Price 6d.

For heating buildings, &c., by hot-water boilers are used of a saddle-shape, which are divided into two separate parts along the crowns. Flues may be made through the crown and the internal shell may be corrugated. Each half is cast or wrought separately and placed together in the usual brickwork. When the boilers are cast, the outer side plates are made separately, and secured to the internal shells of the two separate halves.

* Written to Edmund Yates, September, 1865.

† Compiled by Hart & Co., Patent Agents, 28, New Bridge-street.

CASES UNDER METROPOLITAN BUILDING ACT.

WOODEN CONSTRUCTION.

Mr. Henry Jarvis, District Surveyor of Camberwell, on the 4th inst. summoned Mr. Robinson, of 23, Peckham-grove, builder, before Mr. Ellison, at the Lambeth Police Court, for having erected a building enclosed on three sides with wood and glass, which was not in accordance with the Building Act.

The defence set up was that the erection was only a shed and not a building, and was exempt from the operation of the Act, and that the defendant was induced by the District Surveyor to give notice under compulsion.

The District Surveyor urged that the building was a workshop with two work-benches in it, and that the defendant used it as a workshop; that upon the first discovery he acquainted the defendant that he had subjected himself to a penalty for not having given notice, and that unless he took down the building, or gave due notice, and amended the irregularity in it, proceedings would have to be taken to have the penalty enforced; and upon this the defendant gave notice.

After examining the drawing of the building, and, hearing further evidence, the magistrate made an order for the building to be pulled down at once, or walls to be built to enclose it, and for the defendant to pay 32s. costs.

WILKINSON'S GRANITE CONCRETE PAVING.

Sir,—With reference to an article in your paper of the 9th ult., *re* "Cement, Vulcan, and Asphalte Floors," it mentions that a great difficulty is experienced in finding a material to construct tanks for acid.

We may state that our material is extensively used for tanks in the chemical works on the Tyne and Wear; it is an economical material, and thoroughly resists the action of the acids where brick, lead, zinc, galvanised iron, and other materials have signally failed. W. B. Wilkinson & Co.

SEWER VENTILATION.

Sir,—The Littlehampton Local Board of Health has lately completed a system of sewerage said to be on a "very scientific principle." There are a considerable number of manholes with "patent charcoal ventilators" connected with the sewers, but lately the authorities caused these scientific ventilators to be stopped up with street mud to prevent them from stinking the visitors out of the town. I should like to know where the sewer-vapours and gases go when the sewers are tide-locked? I am so ignorant I cannot see wherein the scientific principle lies. A Poor Buffer.

FINCHLEY SCHOOL-BOARD COMPETITION.

Sir,—In the *Barnet Press* of last week the report of a Finchley School-Board meeting (extract enclosed) states that a letter was read from me, "offering to assist the Board gratuitously in taking into consideration the erection of the new Board schools."

This statement is erroneous. As a resident, and otherwise interested in the parish, I addressed to the Board a letter, suggesting that, in the conduct of the competition (in which individually I should take no part) they might adopt the principal recommendations made by the Institute Committee, of which I am a member, viz.:—

1. To appoint an experienced architect as assessor, to advise in drafting the conditions of the competition, and selecting the best designs.

2. Instead of premiums, to award *each* selected competitor a sum of money, to compensate him for time and costs.

3. To engage the authors of the chosen designs to carry out their work.

The foregoing (in brief) is a summary of my proposals. To offer gratuitous or other services was never in my mind; indeed, to have done so, under the circumstances, would have been in such bad taste, to say the least, that I will ask you to give me space in your columns for this disclaimer. Samuel Knight.

SEWERAGE WORKS.

Harrow.—Mr. J. Thornhill Harrison C.E., one of the inspectors of the Local Government Board, has held an inquiry as to the propriety of granting permission to the Local Board to borrow a sum of 6,500*l.* for the proposed sewerage works for Roxeth and Sudbury Hill. The number of inhabited houses with which it was proposed to deal under the scheme was 486, with an estimated population of 2,500 at the outside. The acreage of the land which it was proposed to purchase was 28¼ acres. It was intended to deal with the sewage by irrigation on that land. The drainage of the district at present was disposed of by four outfalls. The northern portion of Harrow was drained to the Greenhill Irrigation Farm of 17½ acres, near the railway station. On the south there were some tanks at Sudbury Hill, which were partially affected by the present scheme. On the east there were some other tanks at Sheepcote, where the sewage was treated. The western and south-western districts were those affected by the present scheme. There was there a system of sewers draining into the natural watercourses in the low-lying part of the district. Those watercourses discharged into a brook called the Yedding, and so into the Thames. That state of things had, for a long time, caused many complaints to be made to the Local Board. Mr. Alfred Williams, C.E., is the engineer of the scheme.

Burslem.—At a monthly meeting of the Burslem Town Council on the 4th inst., Councillor Ball, in proposing a resolution of which he had given notice, for sub-letting the sewage-farm, said the farm, under the management of the Farm Committee, had, up to the present time, been worked at a loss, although he wished it to be distinctly understood that he did not blame the committee, who had striven hard to win success, and it was their misfortune and not their fault if that had been denied them. The impoverished condition of the land when the farm was entered upon, the drainage and other works required to be done, put any immediate pecuniary benefit out of the question, but when the loss in a single year doubled the estimated amount it looked as if there was something radically wrong. The estimated loss for the year ending March 25 last was 499*l.*, but the actual loss was 998*l.* 6s. 6d. If they added to that, as they were fairly entitled to do, 101*l.* 9s. 6d. as interest on 2,029*l.* 11s. 4d. sunk in stock, for which they got no return, they had a total loss of 1,099*l.* 15s., representing a rate of 3¼d. in the pound. Alderman Hulme supported the resolution, and said something like 3,000*l.* had been lost on the farm, and he contended that there ought to have been no loss. It might have been sub-let for the rent they paid,—many farms not so good were let at 50s. an acre. Councillor Maddock said he did not believe the actual loss on the farm had been so great as had been represented. They had not stocked the farm, and grass was rotting for want of cattle to eat it. The resolution was adopted, and the best mode of carrying it into effect was referred to the committee.

PROVINCIAL NEWS.

Booth (near Halifax).—On the 30th ult., a "rearing supper" was given to the men employed in the erection of the new co-operative store here for the Luddenden and District Co-operative Society, on the completion of the roofing and closing-in of the building. Mr. Patchett, of Halifax, the architect, has paid great attention to the lighting and ventilation. Each floor is fitted up with special inlets for fresh air, and outlets for foul. The drainage of the new store, as well as that of the houses adjoining, recently purchased by the society, is arranged externally on the intercepting principle, for the prevention of sewer-gas entering the interiors. The masons' work has been carried out by Rowland Gaukroger, the contractors for the other trades being J. & S. Murgatroyd, carpenters and joiners; Jonas Alderson, plumber, glazier, and gas-fitter; and J. & T. Alderson, slaters and plasterers.

Waterloo (Liverpool).—Seafield House, situate on the sea-cost between Seaforth and Waterloo, has lately been opened as a marine hotel and hydropathic establishment, under the auspices of the International Marine Hydropathic Company. The building has a frontage to the sea of 659 ft., and stands in extensive and beautifully laid-out grounds, attached to which are conservatories, winter gardens, vineries, and fruit-houses, under glass, designed by Mr. Ed. Kemp, landscape gardener. Between the house and the sea, and parallel with the promenade, is a large lake, 650 ft. long, containing many million gallons of pure filtered salt water, which is brought from the Perch Rock, constantly pumped in at one end, the outflow being at the other. The depth of the lake is 5 ft. or 6 ft., and in summer it is intended to utilise it for bathing on the American and Continental system. The grounds in front of the house include accommodation for lawn tennis, archery, bowls, quoits, &c., and there is, besides, a music pavilion. The chief entrance to the building is from the Waterloo-road, to which it has a frontage of about 653 ft. In this part of the estate there are ten acres of lawn, intersected by finely-gravelled walks, gay with neatly-kept flower-beds, and the trees which border the grounds amply shelter the house from the east wind. On the extreme south-east are extensive stabling, coach-houses, shippon, fowl-houses, and other accessories, all of which are constructed of Yorkshire and Stourton stone. Messrs. W. H. Weightman & Sons, Liverpool, are the architects of the north wing. Messrs. John Collin & Son, of Warrington, have executed the entire contract for the building; and the other contracts for the various work in connexion with the establishment have been performed by the following firms:—Messrs. Homan & Rodgers, Messrs. G. Atkin & Co., Messrs. Bennett Brothers, Messrs. T. Jones & Co., Messrs. S. Moss & Son, Messrs. G. H. Whitaker & Co., Mr. Robt. Pitt, Mr. John Wallace, Messrs. J. Bramham & Co., Messrs. Mee & Co., and the Gas Fittings Company, Liverpool; Messrs. Laidlaw & Son, Glasgow; Messrs. Alex. M'Intosh, Kirkcaldy; Messrs. Kendal, Milne, & Co.; Messrs. Parker & Brown, Messrs. W. & J. Openshaw, Messrs. Richardson, Tee, & Rycroft; Messrs. Brown, Davies, & Co., and Mr. W. Wilson, of Manchester. The engineering work was entrusted to Messrs. Bradford & Son, Crescent Ironworks, Manchester, whose representative on the works was Mr. Alfred Giles. Mr. Miller was the clerk of the works.

THE WAY WE CONTRACT IN ASHFORD.

Sir,—The first three undermentioned were invited to tender for siding into our gasworks, oak girders on brick piers. After our tenders were sent in, another was invited and accepted at 10s. above the lowest one invited at first; but why, we have not the pleasure of knowing, after the time and expense of estimating:—

Edwd. Dryland	£196	8	0
Steddy & Co.	195	8	0
Jas. Wood	192	10	0
Howland Bros.	193	0	0

Edwd. Dryland, Builder.

CHURCH-BUILDING NEWS.

Northaw.—The dedication of the new parish church of Northaw, Herts, which has been erected in place of the one burnt down on the 20th February, 1881, took place on the 28th ult. by the Bishop of Colchester, acting for the Bishop of St. Albans. The new church having been built on the site of the old one, in the centre of the village, consecration was not necessary. The destruction of the old building was caused by some defect in the heating apparatus, in which a fire had been lighted on the Saturday evening in preparation for the Sunday morning service. The style of the new building is Decorated Gothic of the fifteenth century, and it consists of a nave, chancel, north and south transepts, and south aisle, with porch, and a substantial square tower 84 ft. high. The exterior walls are of Ancaster stone, rock faced, the roof being covered with green slates. The tower,—which contains a clock-room, ringing-chamber and belfry, on three floors,—has four pinnacles, with carved crockets and carved finials to the gables. The east window and that in the tower are filled with stained glass by Messrs. Ward & Hughes, of Soho. The open roof is of stained deal in two shades, while the whole of the seats are of oak, those in the chancel having carved ornamentations. The floor is covered throughout with Minton's tiles. The altar is approached by three tiers of steps formed of Derbyshire marble, while columns of the same kind of marble support the arcade by the transepts. The south aisle is divided from the nave by an arcade of moulded arches and columns, in five bays, all the walls being of plaster stucco of natural colour. The pulpit, the cost of which was defrayed by subscriptions raised by Mrs. Bonsey, is of Ancaster stone, and contains elaborately-carved figures of the four Evangelists standing in canopied recesses. The doors are of oak, and the church will be heated by a Gill stove, by Barton, of Boston. The organ, built by Willis, of London, has been presented by Mrs. Kidston. The interior fittings of the church are mostly of brass, and are the gifts of different members of the congregation. The architects are Messrs. Charles Kirk & Sons, of Sleaford, the diocesan architects for Lincolnshire; and the builder was Mr. John Bentley, of Waltham Abbey. The church is intended to seat about 250, and the cost of it has been, in round figures, 7,000*l.*

Essendon (Hertfordshire).—The Parish Church of Essendon is about to be renovated, under the direction of Mr. Wm. White, F.S.A. The whole was completely modernised some years ago; and it is at present a wonderful specimen of what church arrangement ought not to be. The tower was rebuilt some 210 years ago.

Newtown (Exeter).—The Bishop of Exeter has just consecrated the new Church of St. Matthew, Newtown, Exeter, which has been built as the first instalment of a work of church extension in the city resolved upon some two or three years ago. The building is not yet completed, the chancel and upper part of the tower having to be added hereafter. In a competition confined to the Exeter architects, the plans of Mr. R. M. Fulford were selected; and subsequently the contract for the erection of the first portion of the building was given to Messrs. Luscombe & Son, of Exeter, for 6,000*l.* The memorial-stone was laid on June 9, 1881, by the Mayor (Alderman Pring). The style of building is Early First Pointed, and the material chiefly local red brick. The brick walls are relieved by string-courses and bands of Box-ground Bath stone and deep-red moulded brick, while the dressings of the windows are of Bath stone. The chief ornamentation is on the west front, which faces the roadway. There are double western doors, composed of oak. Above them is a traceried tympanum, glazed with coloured glass, and small windows on each side of the doors to light the entrance-lobby under the gallery. The arch of the dome over the doors is composed of Bath, Pocombe, and Lias stone, while in the head of the gable over the door is a Bath stone niche, in which, at some future date, it is intended to place a figure of the patron saint of the new parish. At present the tower is only carried up to about the level of the nave-roof, and to complete it 1,000*l.* more will be required. The shafts of the columns in the nave are of grey granite, with carved bases and caps of Hamhill stone. From these pillars spring pointed arches. The voussoirs of the arches are alternately of Pocombe and Corsehill (Dumfries) stone. The east end of the nave is backed with a temporary alcove, which will remain until such time as the chancel, the foundation of which has already been laid, shall be completed. The choir-stalls at present project into the nave, from which they are divided by a temporary wooden screen. Above the arches in the nave, light is admitted by means of small pointed windows, fitted with cathedral glass, with coloured heads. The transept arches are of Hamhill stone, with Hampshire brick moulding and a Hamhill label outside. The roofs of the nave and transepts are barrel ones of pitch-pine, and the same material is used for the lean-to roofs of the side aisle, around the walls of which a dado of coloured tiles is to be fixed. The clearstory windows, six on each side, are two-light ones, with small quatrefoil and trefoil lights above. In the western tower, immediately over the entrance-lobby, is a gallery approached by a newel staircase. The front screen of this gallery is of carved Hamhill stone, supported by Corsehill stone columns on Hamhill bases. The gallery is lighted by a large west window, already described, and a small side window. On the west side of the tower is the baptistery. The bowl of the font is of Caen stone, and the die of Corsehill, surrounded by six columns of Devonshire marble. The base is of Caen stone, resting on two blue-lias steps. The builder, Mr. Luscombe, has had all the carving executed by his own workmen. The floor in the centre of the nave is laid with Minton's tiles, and the entrance-lobby under the gallery is paved with the same material. The rest of the floor is laid with wooden blocks. The whole of the glazing has been done by Mr. F. Drake, of the

Cathedral-yard, while the lighting and warming have been entrusted to Mr. F. M. Rice.

London.—Extensive alterations are being made in the Church of St. Saviour, St. George's-square, S.W. In the nave the unsightly galleries have been removed. The caps, label terminations, and bosses supporting the roof have been elaborately carved. The latter form an "angelic choir." A wooden floor has been laid under the seats, and two parish rooms are being constructed in the tower. In the chancel a canopied reredos, with central group of the Last Supper and side figures, is being erected. The arcades on the north and south sides contain bishop's throne, sedilia, and piscina, with credence. The walls and roof are being richly decorated by Messrs. Clayton & Bell, and the floor relaid with polished marble slips and encaustic tiles from the architect's design by Mr. J. C. Edwards, of Ruabon. A brass corona is being made by Messrs. T. Potter & Sons, of South Moulton-street. With the exception of the corona, tiles, and mural decoration, Mr. Thomas Earp, of Lambeth, has executed the whole. The entire work is from the designs, and under the superintendence, of Messrs. Romaine-Walker & Tanner, architects, 19, Buckingham-street, Adelphi. —— During the past few weeks workmen have been employed in making some welcome and much-needed improvements in the church of St. Mary Aldermary, which will tend greatly to the comfort of the congregation worshipping there. For some time past it had been observed that the north and south walls of the church had become damp and greatly disfigured, especially in the winter season. Accordingly it was resolved to thoroughly dry the walls and line them with an oak dado; and the work, which is now nearly completed, has been carried out by Mr. Howard, builder, of Upper Gloucester-place. The dado is of Gothic design, surmounted by a cove-cornice with drop-tracery, and is enriched with mouldings and carved work.

Bury (*Lancashire*).—On the 7th inst. the memorial-stone of the new Church of St. Mark, Bury, now in course of erection, was laid by the Rev. Canon Hornby, Rector of Bury. The new church is being erected in the midst of a dense population, to take the place of a schoolroom which is at present used for public worship, and is from the designs of Mr. J. Wreghit Connon, of Leeds, and Mr. James Demaine, of York, architects.. The cost of the building, exclusive of the tower and spire, is 4,750*l*., and the contract has been let to Mr. Charles Myers, of Leeds, for that sum, being nearly 2,700*l*. less than the tenders from Bury.

DISSENTING CHURCH-BUILDING NEWS.

Abingdon.—On the 5th ult. special services were held in the Baptist chapel in Ock-street, on the occasion of the re-opening of that place of worship after being closed for seventeen weeks, during which period the exterior and interior have undergone thorough renovation. The work has been carried out by Messrs. Buckell & Wheeler, builders, and Mr. D. Stroud, painter and decorator, of Abingdon, at a total cost of something like 700*l*. The whole of the outside of the building has been overhauled, the stonework scraped, and the woodwork painted. The interior, with the exception of the gallery, has been entirely re-seated with low stained pews. It is heated with hot-air apparatus furnished by Haden, of Trowbridge.

Crewe.—A new chapel and school are about to be built at Hightown, Crewe, for the trustees of the United Methodist Free Church. The chapel will seat 700 adults, and the school 250 scholars. Suitable vestries, class-rooms, and outbuildings will be provided. The builder is Mr. A. P. Cotterill, of Crewe; and the buildings have been designed by Mr. S. Hurst, of the firm of Maxwell, Tuke, & Hurst, architects, Southport.

Blowick.—Extensive alterations and additions are being made to the Wesleyan Chapel, Blowick, Southport. The additions comprise six large class-rooms, a library, and a detached lecture-hall, &c. The builder is Mr. T. Duxfield, of Southport; and Mr. S. Hurst, of the firm of Maxwell, Tuke, & Hurst, Southport, is the architect.

Drumbo.—The new Drumbo Presbyterian Church, just opened, has been erected on the same site as the old edifice (which dated from 1660). The plan of the new church comprises a nave, 68 ft. long by 27 ft. wide, and two side aisles, each 14 ft. wide, with a height of 33 ft. to the plastered ceiling, which is flat throughout. The columns dividing the aisles are of cast iron, of such dimensions as to avoid the usual attenuated appearance of columns of that material. Five semicircular arches on each side spring from the capitals of the columns, and are enriched with moulded panels, above which project corbels carrying the roof timbers. The galleries are pitched at an angle which enables every one to have an uninterrupted view of the platform. The principal front of the church is broken by a slight projection with pilasters at each angle, and terminating in a gable, with elaborate finial. At each side are placed wings containing the staircases. A group of three large semicircular-headed windows is placed in the upper part of the gable. These are enriched with pilasters with moulded caps, on which rest a richly-moulded arch. The side buildings have parapets with blockings, broken with pilasters with ornamental terminals. The sides of the building are treated in harmony with the front. On each side of the platform are doors opening into a spacious session-room, below which is placed the hot-water apparatus, which was supplied by Messrs. W. M'Neill & Co., Corn-market, Belfast. The church contains upwards of 980 sittings. The work has been executed by Mr. Hutcheson Keith, Glenravel-street, from the designs and under the superintendence of the architects, Messrs. Young & Mackenzie, Belfast.

Bulwell (*Notts*).—The memorial-stone of a new Wesleyan chapel and school at Bulwell was laid on the 20th ult. The new building will include a chapel, designed to seat 685 adults, and a school-room with six class-rooms, which will accommodate 500 children. There are also to be a minister's vestry, and a complete provision of lavatories and other appurtenances. The edifice is designed in the Gothic style of architecture of the twelfth century. Bulwell stone, rock-faced, will be used throughout, except in the dressed and weathered parts of the building, where Matlock stone will be utilised. The site required that the schoolroom should be under the chapel, but it will be entirely above the level of the front street, and the access to the chapel will be by flights of steps right and left. The building is estimated to cost 3,550*l*. The architect is Mr. John Wills, of Derby, and the contractors are Mr. Thomas M'Culloch, of Bulwell, and Mr. Joseph Monks, of Hucknall Torkard.

Books.

Tenth Annual Report of the Local Government Board. 1880-81. London: Eyre & Spottiswoode, 1882.

This, which is a volume of considerable thickness, consists mainly of a Report and papers submitted by the Board's medical officer, Dr. Thorne Thorne, on the Use and Influence of Hospitals for Infectious Diseases, and contains so much that is of interest to architects that the profession will be doubtless glad to know it is published. Dr. Thorne Thorne has been engaged for a considerable period in examining the various hospitals for infectious diseases throughout the provinces, and has embodied in his Report a vast amount of valuable information relating to sites and soil, general arrangement of infectious hospitals, their construction and details, as well as cost of erection, management, &c., and the effect of hospitals on the localities in which they are placed, that cannot fail to be of interest and assistance to all who are immediately concerned in the erection of such hospitals. And although the Report relates only to infectious hospitals, it is, we think, one of the most valuable additions to the literature of the subject since the important Report by Holmes and Bristowe nearly twenty years ago.

Referring to that Report, and bearing in mind the vast changes and improvements that have taken place since it was issued in the construction of hospitals generally, both on the continent of Europe and in America, it would be of great advantage, as it seems to us, if steps were taken to procure complete information upon the subject up to the present day in the form of a report like that of Dr. Bristowe and Mr. Holmes, and it is to be hoped that before long such an investigation may be ordered.

Miscellanea.

A Migration of Railway Workpeople and its Consequences.—Most of the workmen at Crewe works who some months ago received notice to take up their residence in or nearer Crewe have left Nantwich. Some few exceptions have been made in the case of those who have families engaged in manufacturing establishments and others who have leases of their premises. One consequence of the order which has been enforced by the railway company is apparent in the large number of empty cottages in various parts of the town. It is stated by one gentleman that, taking a walk a few days ago through Beam-street and Volunteer-terrace in the direction of the Barony, he counted no fewer than fifty houses to let. This number might be almost trebled if all the tenantless houses in other parts of the town were included, and the wholesale deportation of workpeople and their families to Crewe and elsewhere cannot fail to have a disastrous effect upon a certain portion of the shop-keeping community as well as upon many property-owners whose houses have been emptied wholesale.—*Chester Courant.*

Pontefract Castle.—The ruins of this historic structure, and the land around them, have recently been excavated and explored, with the object not only of finding some relics of the warlike past, but of converting the place into a pleasure-ground for the inhabitants of the town. During the exploration many interesting discoveries have been made. Old armour has been dug up, as well as cannon-balls, bullets, coins, and pottery. The foundations of the drawbridge and the remains of the Constable's Tower are (according to the *Daily News*) now indicated, and near the ruin hitherto supposed to be St. Clement's Chapel, six skeletons were unearthed. One of the most historic parts of the castle is the ruin of the Swillington tower, in which Thomas, Earl of Lancaster, passed the night prior to his sorry ride up the hill of St. Thomas, on his way to the block and the headsman's axe.

Neath Harbour Works.—These new works are making rapid progress. The contractor, Mr. C. E. Daniel, having invited the commissioners to go over and inspect the works, they, together with the engineer, Mr. W. Wilson, C.E., and other officials, went from Neath on the 5th inst. to Court Sart-road, and were met by the contractor and others. They proceeded along the junction with the Great Western Railway across the Neath Canal, Lord Jersey's and the Gnoll Marshes, to the Navigable Cut, which they inspected minutely, together with the whole of the plant, and expressed their satisfaction with the progress made, as well as with the quality of the materials used. There are about 500 men on the works, and others will at once be employed, so as to proceed as rapidly as the nature of the works will permit.

School of Art Wood Carving, Royal Albert Hall.—The school has re-opened after the usual summer vacation, and we are requested to state that free studentships in both the day classes and the evening classes are at present vacant. These studentships are maintained out of funds provided by the City and Guilds of London Institute for the Advancement of Technical Education. The school is open to amateurs as well as to those who intend to make wood-carving a profession. To those who are unable to attend the classes information can be given by letter and examples supplied. Information, with forms of application and prospectuses of the school, may be obtained by personal application, or by letter, addressed to the manager, School of Art Wood Carving, Royal Albert Hall, Kensington.

Pictures at Manchester.—The annual autumn exhibition of paintings at the Royal Manchester Institution, now open, is once more spoken of with confidence as the last that will be held before the Institution becomes the property of the citizens and the exhibitions pass under the control of the municipal authorities, who will have 2,000*l*. a year to spend in purchases, and a committee of connoisseurs to advise and assist. The matters of difference which for some time hindered the acceptance of the gift of the Institution from its proprietors are reported to have been finally arranged. Taken as a whole, the present exhibition is not of so popular a character as last year's.

For the works required in the execution of an additional relief line of sewer on the south side of the Thames, with an outlet into the Thames at Deptford-green, for the Metropolitan Board of Works. Sir Joseph Bazalgette, engineer:—

W. T. Hook	£68,000	0	0
Nowell & Robson	64,000	0	0
W. J. Botterell	45,452	0	0
Nelson & Co.	45,184	0	0
H. Lovett	43,500	0	0
Macreagh & Macfarlane	42,415	0	0
W. Webster	39,932	0	0
Williams, Son, & Wallington	36,370	0	0
Kellett & Bentley	36,000	0	0
J. Mowlem & Co.	35,490	0	0
Pearson & Son (accepted)	33,990	0	0

For rebuilding No. 10, St. Swithin's-lane, E.C. Mr. Wimble, architect:—

Hall, Beddall, & Co.	£7,383	0	0
McLachlan & Sons	7,337	0	0
Ashby & Horner	7,250	0	0
Scrivener & Co.	7,225	0	0
Morter	7,173	0	0
Dove Bros.	7,000	0	0
Laurence	6,890	0	0
Brass	6,823	0	0

For reservoir, engine-house, &c., at Swinton Waterworks, Rotherham:—

H. Brumby, Sheffield	£4,157	0	0
Chadwick & Co., Masborough	4,100	0	0
J. Hill, Sheffield	4,016	19	11
G. Stephenson, Eckington	3,999	13	9
Dobb & Gummer, Rotherham	3,730	0	0
J. Cropper, Brimington	3,276	8	10
B. Wortley, Doncaster	3,012	15	2
H. Burrows, Barnsley	3,004	15	7
G. Pugh, Rawmarsh	2,889	0	0
D. Arundel, Swinton (accepted)	2,753	17	9

For water-mains, valves, hydrants, and laying the same, for the Swinton Waterworks, Rotherham,—

M. Barber, Barlborough	£1,307	18	6
Hutchinson Bros., Barnsley	1,207	17	0
J. Stephenson, Eckington	1,177	15	9
Chadwick & Co., Masborough	1,098	0	0
J. Hill, Sheffield	1,077	17	0
Dobb & Gummer, Rotherham	1,076	16	9
J. Cropper, Brimington	1,010	13	4
F. Boole, Rawmarsh	1,005	10	6
D. Arundel, Swinton (accepted)	975	5	4
Haggard & Son, Mexborough	957	12	2

For additions and alterations to Rathmore Lodge, The Boltons, Fulham-road, for Mr. J. Turnbull. Messrs. William Wallace & Flockhart, architects. Quantities by Mr. Frederick Thomson:—

S. G. Bird	£2,792	0	0
P. S. Robertson	2,683	0	0
W. & E. Curtis	2,660	0	0
E. Toms	2,483	0	0
J. H. Brass	2,460	0	0
C. Wall	2,377	0	0
Dowsing & Sons	2,247	0	0

For taking down mansion known as Medina House, High-street, Witham, Essex, and building three residences on the site:—

W. Balaam, Trinity-street, Borough, London (accepted)	£1,200	0	0

For proposed stabling to No. 5, Seymour-road, Wandsworth. Mr. Joseph S. Hansom, architect, 27, Alfred-place West, South Kensington:—

T. Seward	£685	0	0
F. F. Buchan	635	0	0
F. Reeves	623	5	0
J. Newton	600	0	0
W. Pearson	592	0	0
J. Sutton	550	0	0
J. Tyerman	549	0	0
W. Webber	536	0	0
W. Bullock	530	0	0
R. Jones	526	18	0
Holloway Bros.	526	0	0
Langler & Pinkham	525	0	0
J. Robinson	519	10	0
H. R. Swain	519	0	0
W. H. Lorder	510	0	0
E. H. Maplesdon	497	15	0
F. P. Treweeke	495	0	0
C. Collins	481	0	0
R. M. Rowse	453	10	0
Higgatt & Brown	452	13	6

For new shop-front at 124, High-street, Stoke Newington, for the Incorporated Society of Licensed Victuallers. Mr. H. I. Newton, architect, 27, Great George-street:—

Drew & Cadman	£103	8	0
Walker	96	0	0
Sage	90	0	0
Pickersgill Bros. (accepted)	79	0	0

For alterations and additions to Nos. 49, 51, 53, and 55, Falcon-road, Battersea, for Mr. W. P. Holland. Mr. Harold Giffin, architect:—

Lathey Bros.	£1,197	0	0!
Eberall	1,035	0	0
B. T. Wood	959	0	0
Turtle & Appleton	725	0	0
Hammond	548	10	0!

For pulling down the old Silk Factory, London-road, Newbury, and building on the site seven cottages, with out-buildings, for Mr. Charles Nukey. Mr. J. H. Money, architect, the Broadway, Newbury. Quantities supplied by Messrs. R. L. Curtis & Sons:—

		Old Materials.
S. Elliot	£1,944	£93
Adey	1,885	100
Harrison	1,535	—
E. James	1,262	20

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